



Eliivuru ya Iphattu Emakhuwa

Ekalaase ya Neexexe

4



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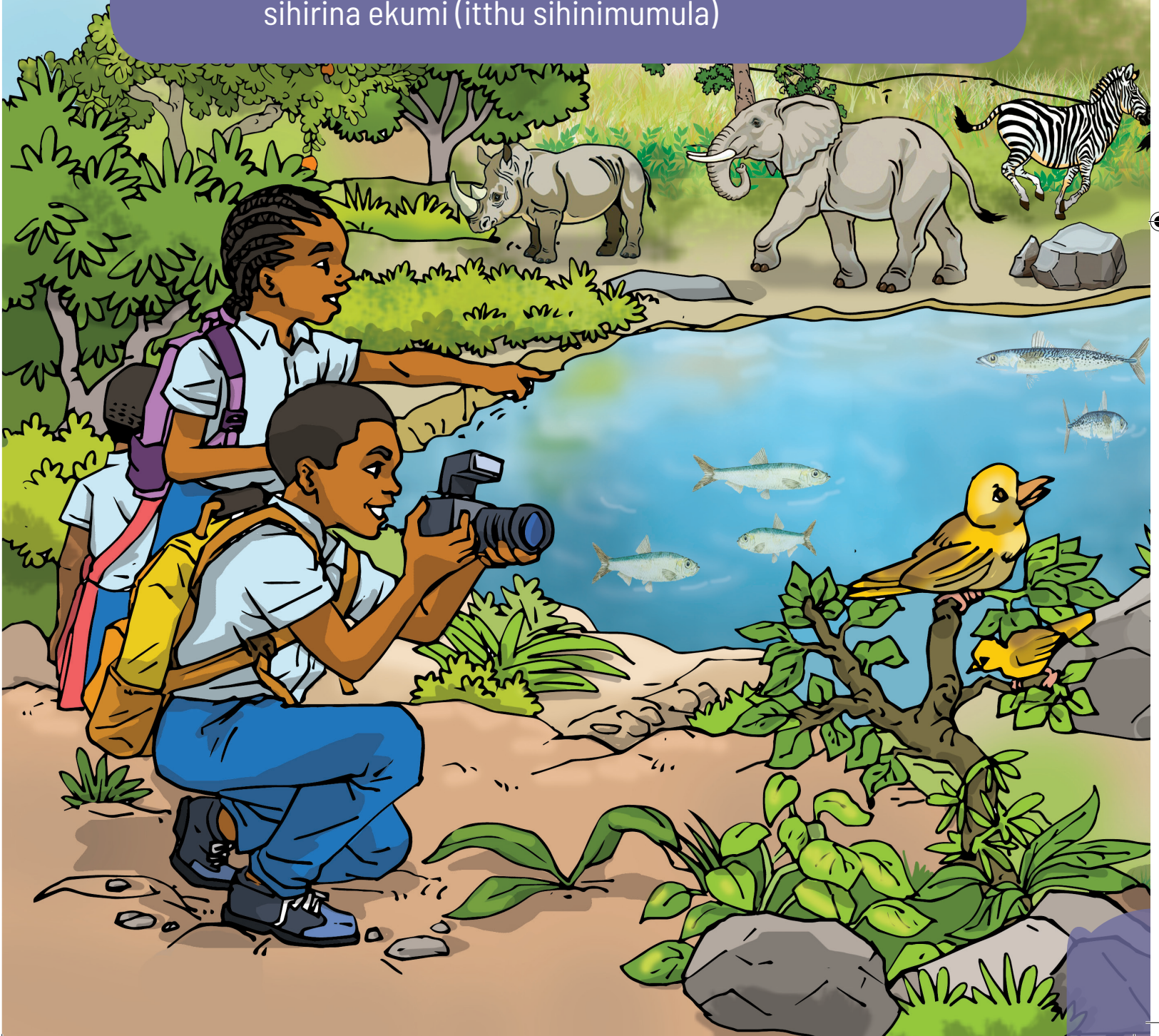
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MPANTTA WA NISOMI 1

ITTHU SIRINA EKUMI NI SIHIRINA EKUMI

Mpantta ola, weyo onooxutta:

- Osuwelela itthu sirina ekumi
- Osuwelela itthu sihirina ekumi (sihinimumula)
- Ohimya makhalelo a itthu sirina ekumi ni a itthu sihirina ekumi (itthu sihinimumula)

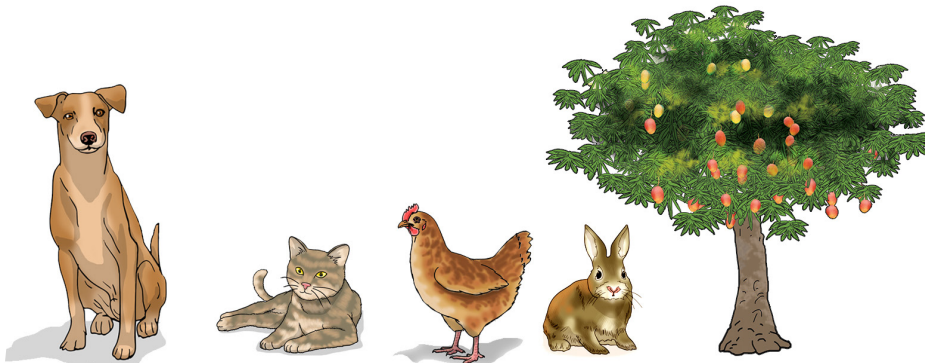


1. Itthu sirina ekumi ni itthu sihirina ekumi

Olepe mukateerununi mwawo nsina na itthu piili sirina ekumi ni na itthu piili sihirina ekumi.

Mmukhalo sinniphwanyaneya vatthayani, mmaasini ni musulu. Yootheene enikhala mmukhalo siniitthaniwa itthu. Itthu iyo sinnikawanyeya wa makhuru mayili:

1. Nikhuru na itthu sinimumula ninihaniwa Itthu sirina ekumi. ntoko miri ni inama.



Ncampulo1: Itthu sirina ekumi

2. Nikhuru nikina na itthu sihirina sihinimumula sinihaniwa Itthu sirina ekumi, ntoko maasi, etthaya, maluku ni itthu sootheene soopakiwa ni mutthu ntoko mukukutta, elaapixi ni meesa.



Ncampulo 2: Itthu sihirina ekumi



Waakhule makoho!

Owehexexe macampulo maxexe ninooniheriwa vathi.

1.Owehexexe nacampulo 4 ninooniheriwa vathi.



Ncampulo 4: Itthu sirina ekumi ni itthu sihirina ekumi

1.1 Wa itthu sinooniheriwa wa ncampulo 4, ti ivi itthu:

- sinimumula?
- sihinimumula?

1.1. Wa itthu sinooniheriwa wa ncampulo 4, ohimye miri miili (2) ni inama piili (2).

2. Othanle etthu emosa ni ocampule mukateerununi mwawo.

- a) Ottikitthele etthu ocampulalaawo.
- b) Olepe vathi vaya, nsina na etthu ocampulalaawo.
- c) Eyo ocampulalaawo ti etthu erina ekumi wala etthu ehirina ekumi?



Osuwele tho!

Pinaatamu ti mwaamunama oovirikana ni akina okhala wiira onnuupuwela ni onnivaanela ni apinaatamu akina orumeelaka olavula, mittikinyo ni olepa.

2. Makhalelo a itthu sirina ekumi

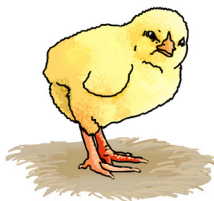
Itthu sirina ekumi, sikhaneleru soovirikana, wa munnuwelo, makhwili ni inamuna sa okhala, iyo sinnooniherya makhalelo mamosaru.

Owehexexe macampulo anittharelana ni anithoonyiherya makhalelo ooholela a itthu sirina ekumi:

Mwalakhu:



Ototholiwa



Onnunnuwa



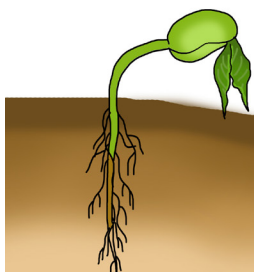
onnitothola



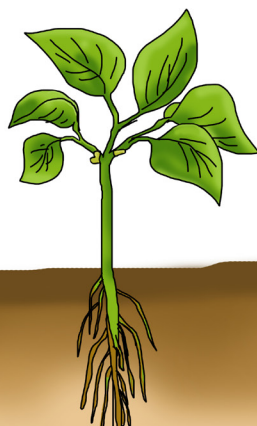
onnikhwa

Ncampulo 4: Mwalakhu

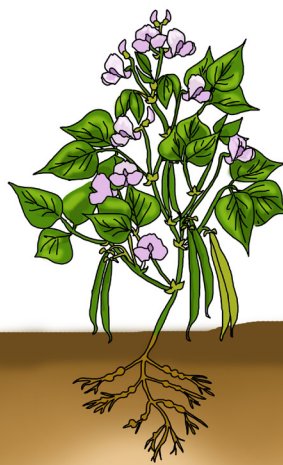
Mwiri wa ekhutte



Onnimela



onnunnuwa



onniima



onnikhwa

Ncampulo 5: Mwiri wa ekhutte

Mutthu



Onooyariwa onnunnuwa onniyara onnikhwa

Ncampulo 6: Mutthu

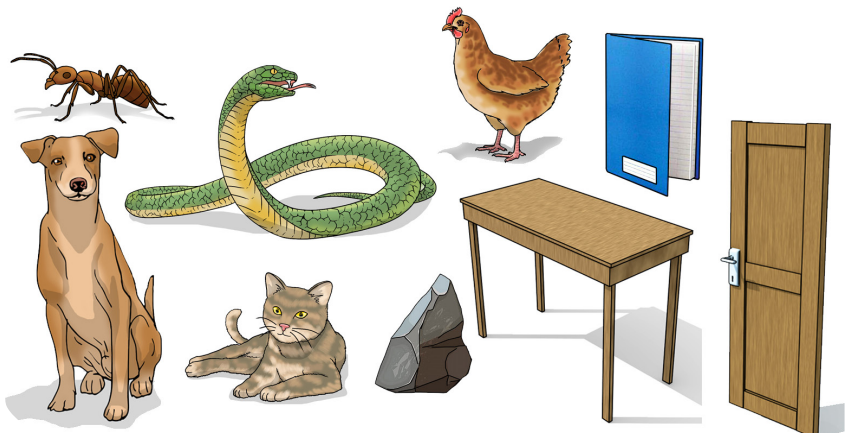
Ntoko sinoonaawo wa macampulo 5, 6 ni 7 itthu sootheene sirina ekumi sinniyariwa, sinnunnuwa, sinniyarelana ni sinnikhwa. Khula etthu ehinooniherya makhalelo ala kahiyo yookhalana ekumi.



Waakhule makoho!

Owehexexe malove ari mutapelani:

1. Owehexexe malove ari mutapelani:
 - a) Ohimye itthu tthaaru sirina ekumi.



- b) Ti avi makhalelo oolikana wa itthu ohimyaawo?
2. Otakiherye olepa mukateerununi mwawo ni omalelihe mma-lakani ni malove wa muttharelano wooreerela: Sinninnuwa, sinnikhwa, sinniyariwa, sinniyarelana.

Itthu srina ekumi sootheene;;; ni



Wuupuwele!

- Mmukhalo sookhala itthu sirina ekumi ni itthu sihirina ekumi.
- Itthu sirina ekumi sinnimumula.
- Itthu sootheene sirina ekumi sinniyariwa, sinnunnuwa, sinniyarelana ni sinnikhwa.
- Itthu sihirina ekumi khasinooniherya makhalelo ala.



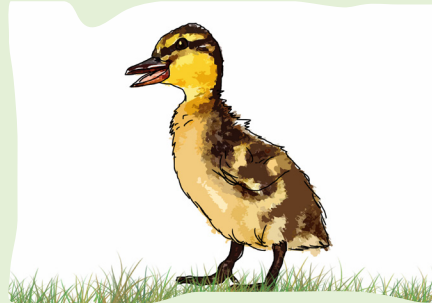
Mayeso

1. Otakiherye olepa mukateerununi mwawo moolumo anitharelana ni omalelihe mmalakani n malove ala: itthu sirina ekumi ni itthu sihirina ekumi:
 - a. Meesa, eparatho ni ekoopho ti
 - b. Xaana, mwalapwa ni ntomati ti
2. Olepe mukateerununi mwawo makhalelo (4) anaavi rikaniha alakhu ni ekhatera.
3. Owehexexe macampulo ari mutapelani. Mukateerununi mwawo othataanihe vooreerela makhalelo a itthu sirina ekumi.

A



B



C



D



MPANTTA WA NISOMI

2

MIRI

Mpantta ola, weyo onooxutta:

- Othoonya mipantta sa mwiri woomalela.
- Opaka muleeliho wa mipantta sa mwiri woomalela.
- Ohimyakasa muteko wa khula mpantta wa mwiri.
- Ovaha mooniheryo wa miri sinniphwanyaneya mmuttettheni.
- Oleeliha efayita miri sirinaaya mmukhalo ni wa itthu sikinaku sirina ekumi.
- Oleeliha okathi wa ekumi ya miri okhuma omela waya mpakha wiima.

2. Miri

Omukohe mwaapara awo waattamannaawo, masina a miri miili (2) onisuwelaawo ni nipuro omphwanyanyaaya.

Ntoko oxuttalaawo mpantta wa nisomi ovinre, miri ti itthu sirina ekumi.

Mmukhalo sookhala miri sinceene soovirikana ni munnuwelo woovirikana, sikina sinniima ithutu ni sikina khasiniima.

Miri sookhala soowiimelela wala sookhala soowaaliwa ni mutthu mmatta, muwoorothani, muxariti ni mapuro makina.

Mukhalelo wa mwiri woomalela ni miteko sa khula mpantta

Mwiri woomalela wookhalana mutathaari, erikittili, makukhu, ithuthu, mihokorokho ni etthyaka. Mwiri wa ekhutte, mwiri wa marapo, ntomati, mmanka, nlimawu ti myooniheryo sa miri soomalela.

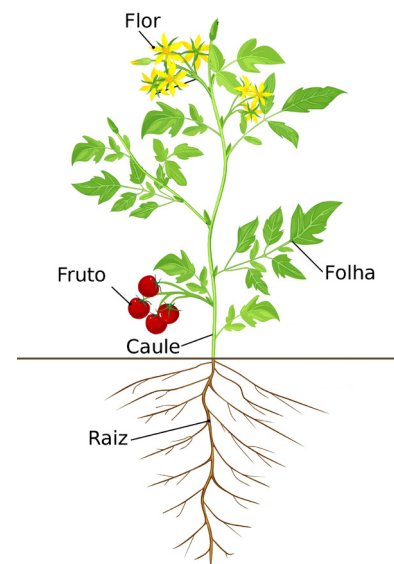
Miteko sa mipantta sa miri

Woosoma mipantta sa miri. Vano onrowa osoma miteko sa mipantta seyiyo.

Mutathaari

1. Wiira osuwelele saana miteko sa mutathaari, owehexexe mweereryo ola:

Soowiimelela: omela woohaaliwa ni mutthu



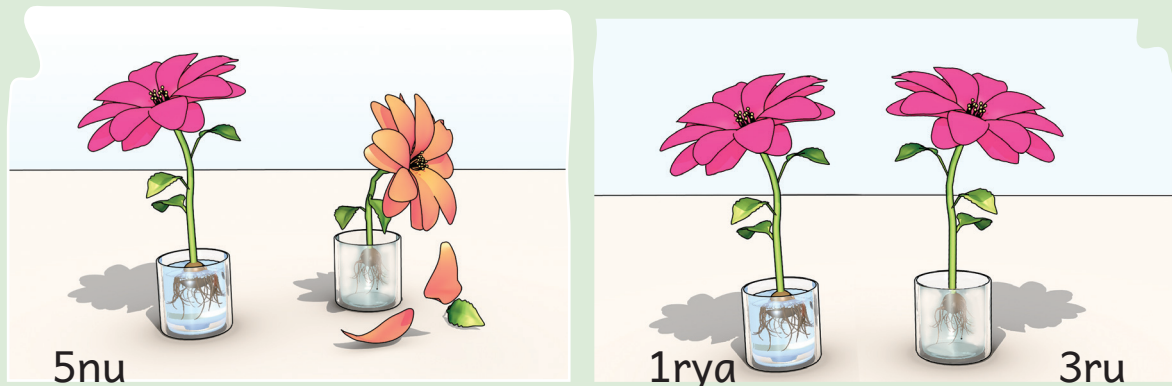
Ncampulo 1: Mwiri woolikana



Mayeso

Mweereryo wa woowoniherya muteko wa mutathaari

Iva oophela mukintaali mwawe miri miili ni ohela mwiri mmo-
sa mukoophuni mookhala maasi ni mwiri mukina mukoophuni
moohikhala maasi khohiya mahiku 5, ntoko ninooniheryaaya
ncampulo niri vathi.



Olepe mukateerununi mwawo mivirikano onoonawo wa mwi-
ri ori mukoophuni moohikhala maasi ni mwir ori mukoophuni
wookhala maasi wa nihiku na 1rya, na 2li ni na 3ru omale-
lihaka olepa etapela eri vathi.

Caíram		Makukhu		Ithutu		Mwiri	
		Aamo- ra	Kha- moonre	Soomora	Khasi- monre	Ohuu- ma	Wookhala
Mwiri ori mmaasini	1 ^{rya}						
	3 ^{ru}						
	5 ^{ru}						
Mwiri woohikhala maasini	1 ^{rya}						
	3 ^{ru}						
	5 ^{ru}						

Omanlaawo oweha mweereryo ola, moonelo xeeni orinaawo?

Mmaliheryo

Mwiri woohikhalana maasi ohuuma ni mwiri wookhalana
maasi wookhala.

Mutathaari**Ncampulo 2:** mutathaari

Mutathaari ti mpantta wa mwiri oniphwanyeneya vanceene-xa vathi wa etthaya.

Miteko sa mutathaari:

- Okhaliha mwiri mutthayani
- Onuula maasi ni maakha a vathi sikhanye iyoolya sa mwiri.

**Waakhule makoho****Waakhule mukateerununi mwawo**

1. Onikhala sayi mwiri woomalela?
2. Muteko xeeni orinaaya mutathaari?

Erikittili ya mwiri

Erikittili ti mpantta wa mwiri onluttaniha mutathaari ni mipantta sikina sa mwiri ntoko makukhu, ithutu ni mihokorokho.

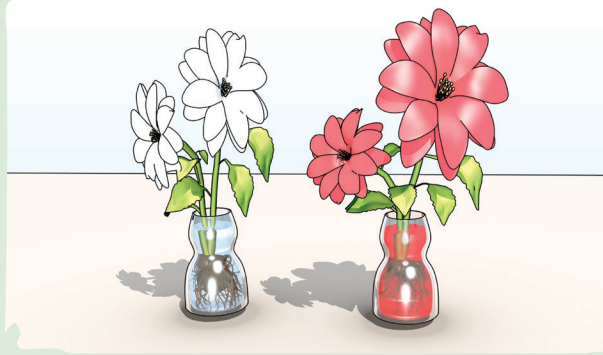
**Ncampulo 3:** Erikittili**Erikittili ya mwiri ehana muteko wa:**

- Ovarelela makukhu, ithutu ni mihokorokho.
- Oviriha maasi ni maakha a vathi mpakha mmakukhuni.



Mayeso

Mweereryo wa woowoniherya muteko wa erikittili.



Ikaruma

Ithutu 4 soottelela wala mwiri mmosa mukhaani wookhala na ithutu soottela

Ikoopu piili soowooneela

maasi

etinta

Mapakelo:

Osarihe ikoopu soopiili ni maasi.

Ekoopu emosa wuuncererele etinta.

Ohele ithutu piili wa khula ekoopu ntoko nnooniheryaaya ncampulo ni ohiye ovira okathi vakhaani.

Woone saana: warumeela mwiri oniiriwa epeexo ya naaso ohele mwiri mmosa wa khula ekoopu.

Moonele:

Exeeni enikhumelela ni ithutu siri mukoophoni murimo etinta wavira okathi vakhaani?

Mwaha wa exeeni eyo eniiraneyaaya?

Mmaliheryo:

Ithutu sookhalana nikhwili na etinta, okhala wiira erikittili ya mwiri erina muteko wa okuxa maasi ni maakha a vathi okhumana omutathaari mpakha othutuni.



Waakhule makoho

Waakhule mukateerununi mwawo

1. Muteko xeeni orinaaya erikittili ya mwiri?

Makukhu

Makukhu anipha-reeleya varikittilini. Awo aakhalana munnuwelo, ikhalelo ni makhwili oovirikana vanceene.

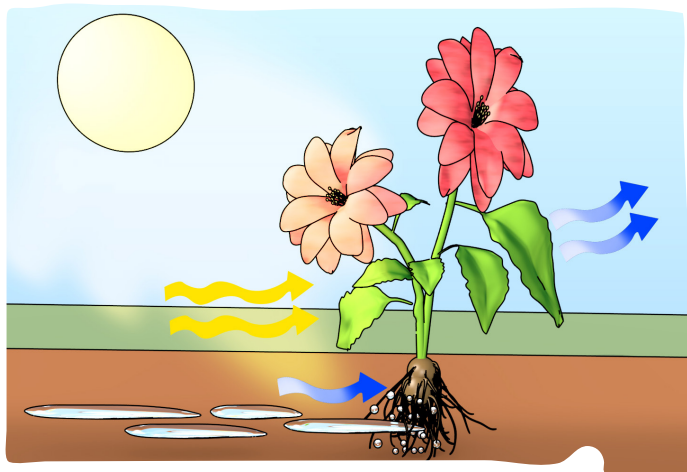
Wa ncampulo niri vathi onooweha mithinto vakhaani sa makukhu.



Ncampulo 7: Makukhu

Makukhu ahaana muteko wa oruweriya eyoolya ya olyiha mwiri. Mwiiranyo owo onihaniha efotosintese.

Wiira oruweriya eyoolya mwiri onirumeela maasi ni maakha a vathi anikhumihiwa ni mutathaari, etiyookisitu ya karpoonu enikhumihaaya mpheyoni ni muthuko oniphwanyaaya ni nsuwa. Wa muteko ola, makukhu annikhumiha okisixeeniyu onimumuliha itthu sirina ekumi sootheene.



Ncampulo 4: Emumulelo ya mwiri

Nave tho makukhu ti mpantta wa emumulelo ni murettthelelo wa mwiri. Okathi wa murettthelelo mwiri onikhumiha maasi wa mukhalelo wa etthapwe.

Vano nto, onimoonexexa muteko wa murettheelelo wa mwiri.



Mayeso

Mweereryo wa woowoniherya murettheelelo wa mwiri

Ekaruma:

Mwapu 1 mukhaani wookhalana mwiri

Palaaxitiku 1 wookhunela mwiri

Elaaxitiku 1 wala mukhoyi wa otthukana myaapu

Mapakelo:

Okhuneele mwiri ni palaaxitiku ni otthuke ni mukhoyi wala elaaxitiku ni owehaweheke vansuwani mpakha ophiya iwoora 3 ntoko nnooniheraaya ncampulo 10.



Mooneo:

Exeeni eniiraneya ni mwiri noomala iwoora 2? Mankhi noomala iwoora 3? Olepe mukateerununi mwawo etthu enirowaawo woona.

Mmaliheryo:

Mpalaaxitikuni annikhumelela mattoyittoyi a maasi mwaha wiira makukkhu a mwiri akumiha etthapwe. Mukhalelo ola oniihaniya murettheelelo.



Waakhule makoho

1. Olepeke mukateerununi mwawo miteko sa nikukhu.
2. Ocampule nikukhu na mwiri omphwanyaneya oxikola wawo.

Ethutu

Ethutu ti mpantta wa mwiri oniphwanyaneya varikittilini.

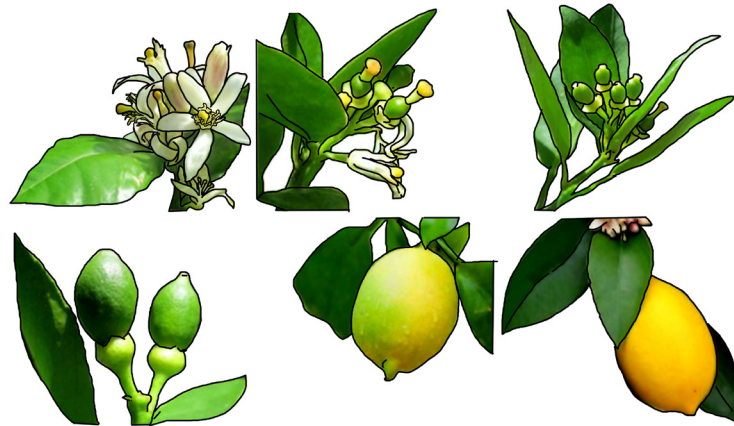
Sookhala mithinto sinceene sa ithutu. Ithutu sinnikhala sa makhwili manceene, suulupale wa sikhaani hata munkhelo woo-reera wala nnaari.



Ncampulo 5: Ithutu

Ethutu erina muteko wa wiimiha mwiri.

Ithutu sinceene sinnithatuwa mihokorokho. Eyo enniiraneya ni ethutu ya muli-mawu enithatuwa okhala limawu, ethutu ya ntomati enithatuwa exuwaari, etthutu ya mpheera enithatuwa epheera.



Ncampulo 6: Etatuxelo ya ithutu wa muhokorokho



Waakhule makoho!

1. Olepe mukateerununi mwawo muteko wa ethutu.
2. Ocampule ethutu enoosivelaxa. Olepe vathi vaya nsina na ethutu eyo.

Muhokorokho

Muhokorokho wookhalana makhwili ni munnuwelo woovirikana vanceene ni sihaavo sinlyiwa sikina sihinlyiwa.

Muhokorokho ohaana muteko wa osuka etthyaka.

Mihokorokho sinceene sookhalana itthyaka muhina mwaya. Sookhala mihokorokho sirina etthyaka emosa paahi, ntoko emanka, epheera, niphepu ni sikina sookhalana itthyaka sinceene, ntoko eraranca, niwuryo ni nantthatto.

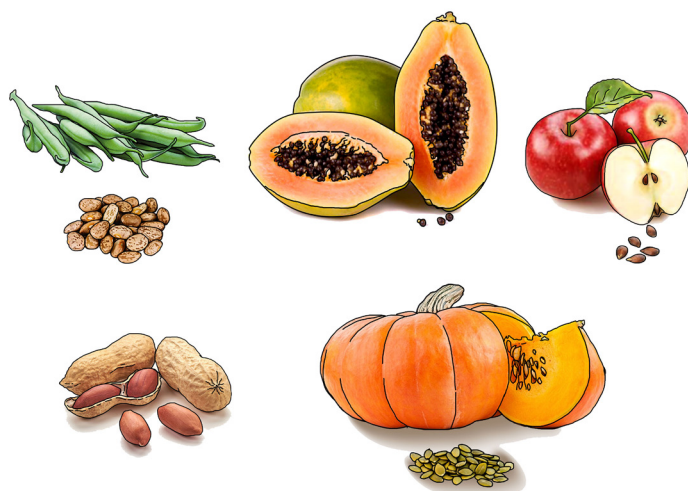


Ncampulo 7: Muhokorokho

Etthyaka

Itthyaka sookhalana makhwili ni munnuwelo woovirikana vanceene.

Etthyaka yookhalana muteko wa ome-liha mwiri musya. Imara sinceene enikhala yoosukiwa ni yookha-peleliwa muhina mwa muhokorokho.



Ncampulo 8: Etthyaka



Mayeso

Mweereryo wa woowoniherya omela wa etthyaka

Ikaruma:

Etthyaka (ekhutte, nakhuwo, mattuvi ni sikina)

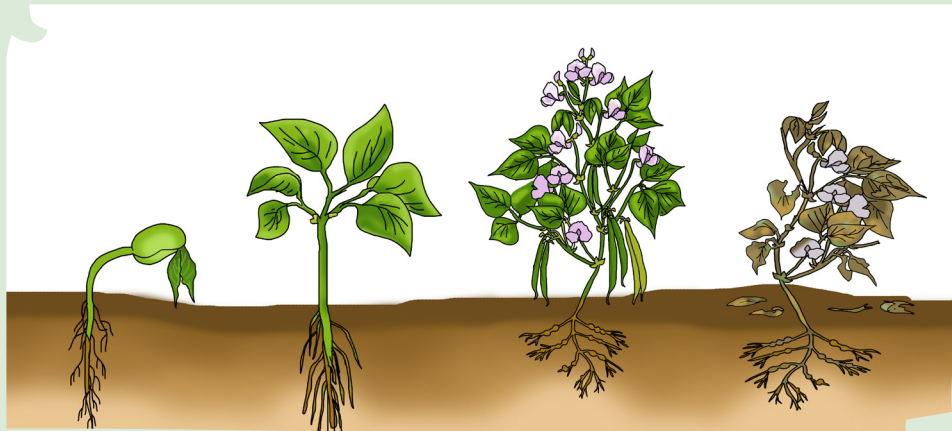
Ekoopfo

Maasi

Etthaya wala nxotte

Mapakelo:

Ohele mukoophuni etthaya vakhaani wala nxotte ni varyari vaya ohele etthyaka ya ekutte ni okhuwariki khula nihiku woohisariha maasi.



Mooneo:

Wooneke khula nihiku ni olepeke mukateerununi mwawo etthu ononaawo.

Mmaliheryo:

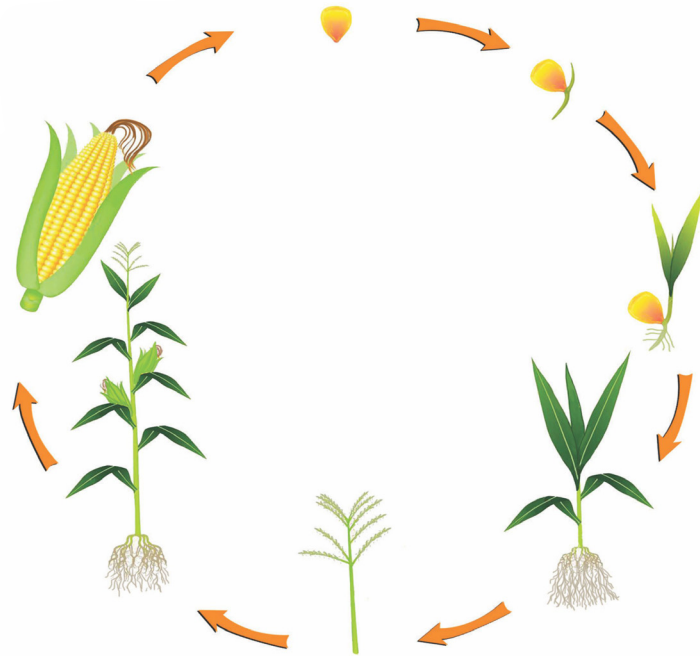
Oviralaaya mahiku etthyaka ya ekhutte yaahimela onaphuwela mwiri musya, mwiri wa ekhutte.

2. Esiikulu ya ekhalelo ya miri

Etthyaka yamorela vattthayani ni yaphwanya makhalelo ooreerela ennimela onaphuwela mwiri mukina.

Wiira mwiri wunnuweke saana vannittthuneya ophwanyaneya maasi, etthaya yoowunttelana saana ni nkupetthe wooreerela.

Mwiri musya onnunnuwa ni onnirweela ithutu ni mihokorokho. Wa mihokorokho sinnikhuma ipyo sikina.



Ncampulo 9: Esiikulu ya ekhalelo ya nakhuwo

3. Miri simphwanyaneya mmuttettheni

Mmuttettheni ninniphwanya mithinto soovikana sa miri ntoko: nakhuwo, mattyookhwa, mukhacu, mattuvi, mwiri wa ekhutte, mukole, musoro, mpila, mukaliipitu, xanfuuta ni sikina.

Voottharelana onoorowa osoma miri miili siniphwanyaneya elapo ahu.

Mukole

Mukole ti mwiri mmosa onlimmwa vootepaxa mittedthe soowaattamela opahari sa iporovinsiya sa Inyampaani, Osampeesiya, Wamphula ni Okaapu Telekaatu. Owo mwiri onikhala iyaakha sinceene ni



onnirakamela osulu voophiyera imeeturu 30.

Makukhu a mukole ti ooripelela ni oowaatapuwa ni ithutu saya ti ya nikhwili nancano. Muhokorokho wa mukole oniiriwa ekole.

Efayita ya mukole



Erikittili ya mukole onirumeeliwa wa otekeliwa impa, ikalawa, ikaruma ni itthu sikina.

Makukhu anirumeeliwa wa otthunyeliwa impa, opakiwa mivelo ni otekiwa ikintaali.

Makasikho a ekole annipakiwa eku-luxawu ni isofa.

Ncampulo 11: Mukole

sahu, ennipakiwa makhura, ipumata, esaphawu ni sikina.

Ekole enniira mpantta wa iyoola

Mattuvi

Mattuvi onniruweriwa elapo yootheene vootepaxa iporovinsiya sa Inyampaa-ni, Okaasa, Omaputu, Wam-phula ni Oniyasa.

Mwiri wa mattuvi oni-mwaaliwa mmatta ni onni-likana woohiphiya myeeri mithanu ni mmosa.



Ncampulo 12: Mwiri wa Mattuvi

Muhokorokho onikhala vathi wa etthaya ni akhoomala makukhu anikhala oonyaala noomala annuuma. Owo ti moo-niheryo wiira mihokorokho soolikana, nto owo okathi wa wuuruliwa.

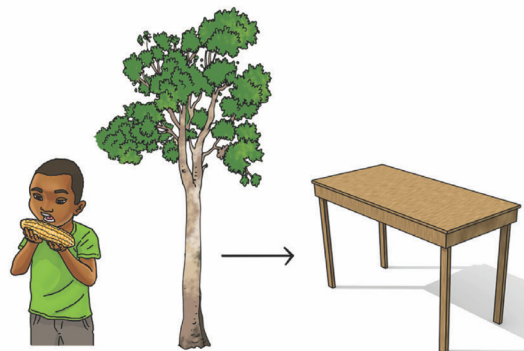
Efayita ya mattuvi

Mattuvi onnirumeeliwa ntoko eyoolya ahu, onnipakeliwa makhura, manteeka ni itthu sikina.



4. Efayita ya miri

Pinaatamu ni itthu sikina sirina ekumi khanirowa okhala woohoo-naneya miri maana iyo sinnivaha okisixeeniyu nimmumulaahu.



Miri sinnirumeeliwa wa makhalelo oovirikana, ntoko eyoolya, ntoko emateeriya pirima (ikaruma sinipakeliwa itthu), ntoko mirrette (miri siniloola), ophwaneliha impa sahu, ixikola, ipaayiro ni ipooma, ni itthu sikina

Mulaponi mwahu atthu anceene anivara muteko wa olima. Miruweryo sa mmatta sinnittotteliwa muraarelo wa olya ni ikina sinootumihiwa.

Musurukhu oniphwanyiswa wa miruweryo sootumihiwa onnithumeliwa ikuwo, esaphawu, maakha, iliivuru, ikininu, wiira yunnuwiherye ikhalelo saya.



Muuluulo ni Muwehawehero!

Waakhule mukateerununi mwawo:

1. Otakiherye olepa mukateerununi mwawo muhimeryo wa ekeekhayi. Mwiri woomalela wookhalana:
 - a) Mutathaari, mihokorokho ni itthyaka
 - b) Mutathaari, erikittili ni makukhu
 - c) Erikittili, itthyaka ni makukhu
2. Omalelihe mmalakani ni malove ala: efotosintese, muretttheelelo.
 - a) Miri sinniruwerya eyoolya aya sittharihaka mwiiranyo onihaniya _____.
 - b) Ti mmkukhuni oniiranyaya _____mpantta mwiri onikhumihaaya maasi wa mukhalelo wa etthapwe
3. Wa muteko wa mipantta sa mwiri, oluttanihe ni muupa ekoluna 1 ni ekoluna 2.

Ekoluna 1	Ekoluna 2
Ettuthu	wiimiha mwiri
Erikittili	omeliha mwiri musya
Etthyaka	oviriha maasi ni maakha a vathi



Wuupuwele


- Mwiri woomalela ti wookhalana mutathaari, erikittili, makukhu, ithutu ni mihokorokho.
- Esiikulu ya ekhalelo ya miri enipacerya ni omela wa etthyaka. Etthyaka yamela onniphuwela mwiri musya nto ennipacerya tho esiikulu.
 - Woohikhala miri khiyaakhala ekumi mulaponi maana, iyo sinniphwanyiha okisixeeniyu onimmumulaaya atthu ni itthu sikina sirina ekumi.
 - Miri ti yooholela wa iyoolya sa itthu sinceene sirina ekumi.
 - Miri sinnirumeeliwa ntoko mirette, ikaruma sinipakeliwa mopiiliya, impa ni ophwaneliha nipuro.
 - Miri sikina sinoonaneya mmittettheni ti nakhuwo, mat-tyookhwa, mattuvi, ikhutte ni sikina.



Mayeso

Waakhule mukateerununi mwamo:

1. Olepe nsina na mwiri woomalela oniphwanyaneyya mmuttetheni mwawo. Mwaha wa exeeni owo okhanlaaya woomalela.
2. Oluttanihe ni miyuupa, mipantta sa mwiri (A) ni muteko aya (B).
3. Ohimye efayita ya miri, ovahaka miyoonihero miraru.
4. Mwaha wa exeeni eniriwaaya woohikhala miri khiyaakhala ekumi mulaponi?
5. Ohimye makhalelo mararu ooreerela wiira mwiri wunnuwe.

A: Mipantta sa miri	B: Miteko
	<ul style="list-style-type: none"> • Okhaliha mwiri vatthayani • Omeliha mwiri musya • Oviriha maasi ni maakha a vathi mpakha mmakukhuni • Muteko wa wiimiha mwiri • Osuka ni okhapelela etthyaka • oruwerya eyoolya mwiri

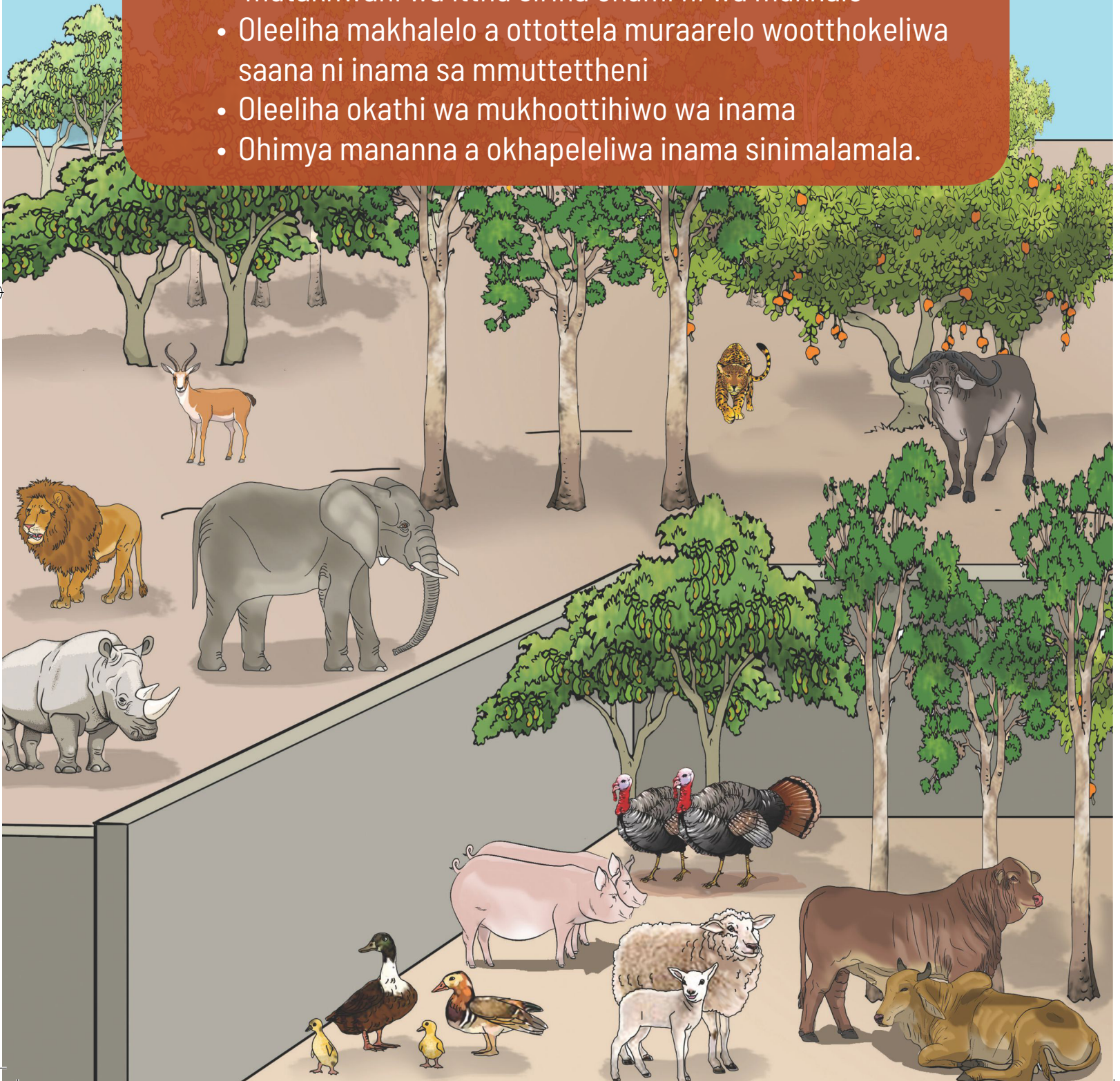
MPANTTA WA NISOMI

3

INAMA SA MUHUWO

Mpantta ola, weyo onooxutta:

- Ohiyaniha mipantta sooholela sa mwaamunama;
- Othothokola wa inama sa muhuwo ni sa mutakhwani
- Oleeliha efayita erinaaya inama sa muhuwo ni sa mutakhwani wa itthu sirina ekumi ni wa mukhalo
- Oleeliha makhalelo a ottottela muraarelo wootthokeliwa saana ni inama sa mmuttettheni
- Oleeliha okathi wa mukhoottihiwo wa inama
- Ohimya mananna a okhapeleliwa inama sinimalamala.



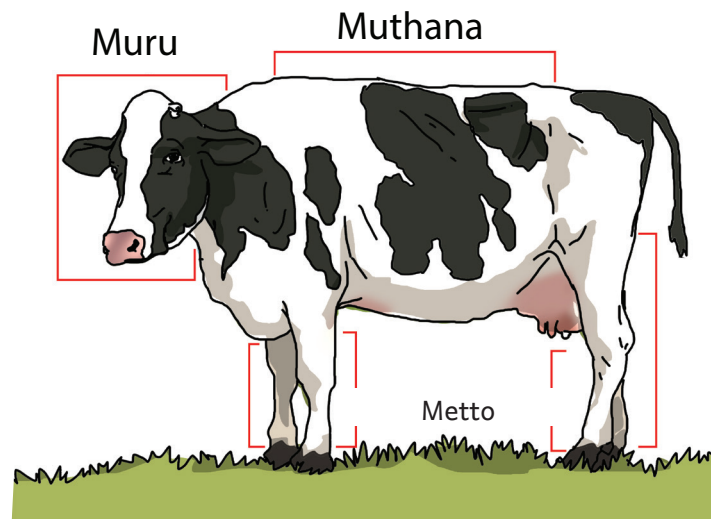
3. Inama

Inama ti itthu sirina ekumi siniyariwa, sinunnuwa, siniyarela-na ni sinikhwa. ntoko mutthu, mwalapwa, etthepo.

Mutthu ti mwaamunama oovirikana ni axinama akina okhala wiira owo onnuupuwela ni onnivaanela ni akinaku orumeelaka malavulo ni malepelo.

Mukawanyeyo wa erutthu ya mwaamunama

Vanceenexa, erutthu ya mwaamunama ennikawanyeya wa mipantta miraru sikhangle: mpantta wa muru, mpantta wa erikittili ni mpantta wa miyoono ni metto



Ncampulo 1: Emompe (Muru, Erikittili ni Miyoono ni Meetto)

Muru ti mpantta oniphwanyaneya mayitho, eyano, ephula, maaru ni wookhalana efayita ya weettiherya miteko sinivara mwaamunama ntoko wetta, olya ni orupa.

Erikittili ti mpantta wa erutthu ya mwaamunama orina muteko wa waalipiherya ni waasuka aneerutthu a mmirimani ntoko erooho, masasu, marupo.

Miyoono ni metto ti mipantta sa erutthu ya mwaamunama erina muteko wa weetta.



Waakhule makoho

1. Erutthu ya mwaamunama ennikawanyeya wa mipantta miraru. Tiivi?

Inama sa muhuwo ni inama sa mutakhwani

Mmukhalo sinniphwanyaneya mithinto soovirikana sa inama sikhanye woothukumanyiwa wa inama sa muhuwo ni inama sa mutakhwani.

Inama sa muhuwo – ti iye sinihuwiwa ni pinaatamu ntoko sinoonaawo vancampuloni.



Ncampulo 2: Inama sa muhuwo



Waakhule makoho

Waakhule mukateerununi mwawo

1. Ti avi makhuru a inama aniphwanyaneya mmukhalo?
2. Ti ixeeni inama sa muhuwo? Wooniherye ixexe.

Inama sa mutakhwani

Inama sa mutakhwani – ti iye sihinihuwiwa ni pinaatamu ni sinikhala mutakhwani, ntoko sinoonaawo vancampuloni.

Inama sa mutakhwani sinniikhalela mwaha wa ikuru saya: axayaka, avaraka ihopa wala alyaaka imelamela ni akina yaakhuuraka axinama akina, awo ti kharamu, kusupa, ekikiri.



Ncampulo 3: Inama sa mutakhwani



Waakhule makoho

1. Ti ixeeni inama sa mutakhwani? Wooniherye tthaaru.

Efayita ya inama sa muhuwo

Mmuttettheni, atthu annihuwa inama ni iyo sookhalana mureerelo muulupale mwiimusini ni mmuttettheni.

Inama iyo sinnaaphwanyiha anammawaa-ni enama, mooce, mukaka, esapala, makhuva ni sikina.



Enama, mooce ni mukaka, sinnirumeeliwa muyoolyani mwahu. **Esapala** ennivareliwa muteko mufaapirika sipakeliwaka isapattho, mirupa, itamanko, kafukho, maniya, ikoma ni mavaka.

Mapururu ni matteka a inama sa mapupha annirumeeliwa mufaapirika munipakiwa masawu ni ekuluxawu.



Ncampulo 5: isapattho, mirupa, itamanko, kafukho, maniya, ikoma ni mavaka.

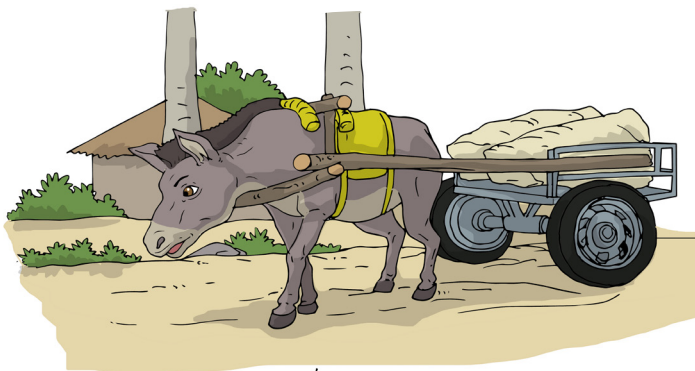
Makhuva anivareliwa muteko wa opakiwa iparatho, ixaavina, ipiirixi, ni sikina.



Pinaatamu nave onnaarumee-la axinama wa miteko soovirikana ntoko:

Mwalapwa ti mwaamunama oopatthana ni pinaatamu ni onnivareliwa muteko wa opaka erontta ni oxaya.

enyompe, puuru, ekhavallo, annivareliwa muteko wa waapakhira atthu ni marota ni muteko wa olima mmatta.



Exuturuumu ya imompe, ikuluwe, alyakhu ni ahukula annivareliwa muteko wa wunttiherya etthaya mmatta.



Waakhule makoho

Waakhule mukateerununi mwawo

1. Ti ivi inama sinihuwiwa muttethe onikhalaawo?
2. Olepe mukateerununi mwawo efayita ya inama sa muhuwo sirinaaya wa pinaatamu, ovaheryaka miyoonihero miraru.

Efayita ya inama sa mutakhwani

Mutakhwani ninniphwanya inama soowoopiha. Iyo ti sookhalana mureerelo muulupale wa mukhalo ni wa itthu sirina ekumi.

Inama sa mutakhwani eettaka munihuruni sinnipaka iphiro ni sinnuntakasa iritta sa miri, voonaneyaka mmwaryamwaryo wooreerela wa epheyo.

Inama sa mutakhwani sinnaaphwanyiha apinaatamu enama, esapala, mayino a etthepo, mwiila ni makhuva, sinipakeliwa isapattho, ikasako, mirupa, maniya, iparatho ni itthu sikina.

Inama vakhaani sa mutakhwani sinniphwanyiha enama ya olya apinaatamu, ntoko naahe, etheci, phako (ekuluwe ya mutakhwani).

Okathi wa mukhoottihiwo

Inama sa mutakhwani ni sa mmaasini (ihopa, mixoxo, ikhala ni ikina) saaphaveliwaka oxayiwa ni omiseriwa ohaana osuweleliwa okathi wa mukhoottihiwo.

Okathi wa mukhoottihiwo ti okathi anamaxaya ni anammi-serya anikhottihiwaaya oxaya ni omiserya, wiira inama iyo siya-relane ni sinnuwe oratteene.

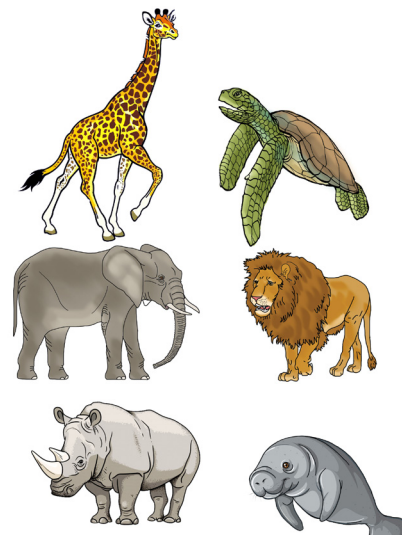


Waakhule makoho

1. Olepe mukateerununi mwawo masina a inama tthaaru sa mutakhwani.
2. Olepe mukateerununui mwawo efayita ya inama sa mutakhwani. Ohimye itthu tthaaru sinooniherya efayita sa inama.
3. Ti exeeni okathi wa mukhoottihiwo?

Mananna a okhapeleliwa inama sinimalamala

Inama sinimalamala ti iye sinoopihasa olakaseya mmukhalo. Omosampiikhi aakhala axinama vakhaani anoopihasa olakaseya ntoko ncoo ootteela, nleka, etthepo, ehaasa, kharamu ni ihoopa suulupale sa mpahari.



Okhapeleliwa wa axinama anoopihasa olakaseya ohaana okhala muvelaveliho wa atthu ootheene. Axinama ala ahaana mureerelo munceene wa olikaniherya mukhalo wa axinama awo aryaaya.

Axinama anoopihasa olakaseya vanceenexa awo aniheliwa mpaarikhi ni mureseerivani wiira akhapeleliwe wa anamaxaya oowiiyerya, awo ti ale anixaya woohitthuniheriwa.

Opa hiwa muhuru, oxaya ni omiseriwa woohikasoopeliwa, wiikitthiwa miri ni ihasara sa ephattu (ethaawuni), sinnitepa olakaseyiha inama.

Namukhuluwiru nihaana woonela ofayi ni okhapelela inama, nihikuphuleke inama sa muhuwo, ni naakiheryeke wookotthiwa wa inama sa mutakhwani.

Oxaya ni omiserya wa mwiiyeryo wa inama sinoopiha olakaseya onnihukhummwa ni nlamulo.



Waakhule makoho

1. Olepe masina a inama piili sinoopiha olakaseya.
2. Mureerelo xeeni orinaaya okhapelela inama sinoopiha olakaseya?



Wuupuwele

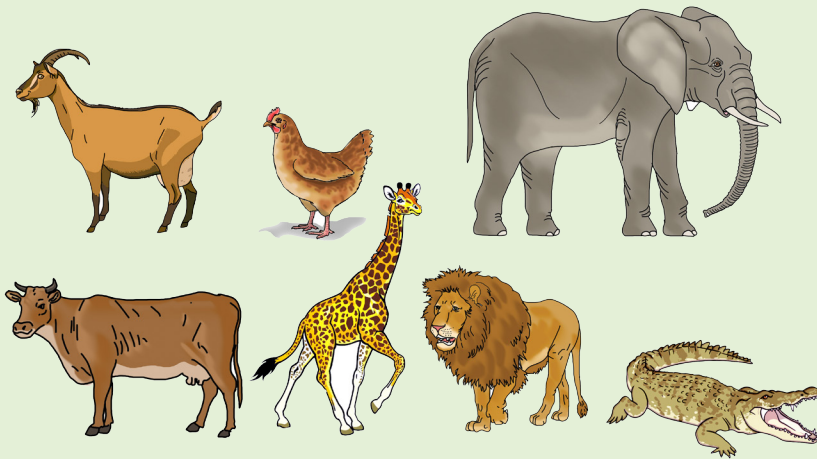
- Erutthu ya mwaamunama ennikawanyeya wa mipantta miraru sikhanye, muru, erikittili ni miyoono ni metto.
- Muru wookhalana efayita ya weetiherya miteko sinivara mwaamunama. Erikittili ehaana muteko wa waalipiherya ni waasuka aneerutthu a mmirimani.
- Miyoono ni metto ti mipantta sa erutthu ya mwaamu nama erina muteko wa weetta.
- Inama sa muhuwo ti iye sinihuwiwa ni mutthu, ntoko mwalapwa, enyompe ni mwalakhu.
- Inama sa mutakhwani ti iye sihinihuwiwa ni mutthu, ntoko kharamu, naahe ni etthepo.
- Inama ti sooreerela okhala wiira sinniniphwnyiha enama, mukaka, esapala ni mireerelo sikina.
- Ti vooreerela okhapeleliwa inama sinoopihasa olakaseya.



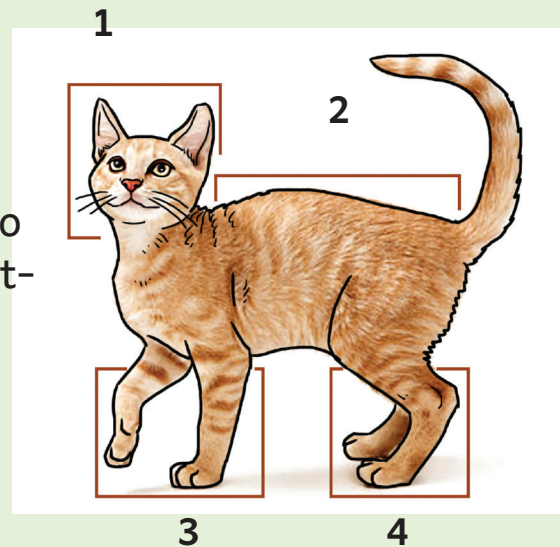
Mayeso

Waakhule mukateerununi mwawo

1. Owehexexe nipawe nirina inama soovirikana (cabrito, galinha, elefante, girafa, boi, elefante, leão, crocodilo).
 - a) Olepe mukateerununi mwawo masina a inama tthaaru sa muhuwo.
 - b) Olepe mukateerununi mwawo masina a inama tthaaru sa mutakhwani.



2. Owehe ncampulo:
 - a) Opake muleeliho wa ncampulo
 - b) Efayita xeeni orinaaya mpant-ta wa nummeru 1.



3. Olepe mukateerununi mwawo ifayita tthaaru sa inama sa muhuwo.
4. Efayita xeeni orinaaya okathi wa mukhoottihiwo?

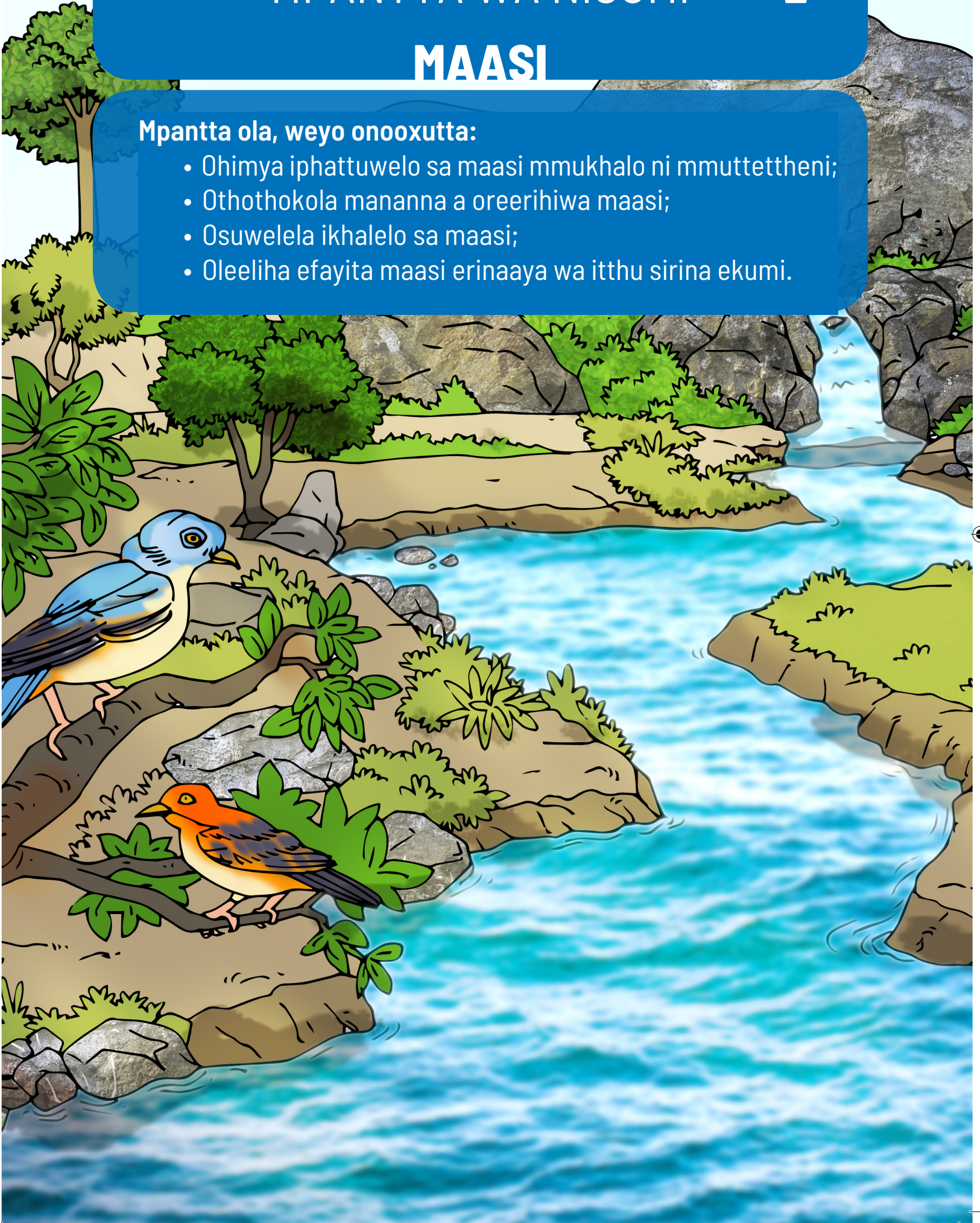
MPANTTA WA NISOMI

4

MAASI

Mpantta ola, weyo onooxutta:

- Ohimya iphattuwelo sa maasi mmukhalo ni mmuttettheni;
- Othothokola mananna a oreerihwa maasi;
- Osuwelela ikhalelo sa maasi;
- Oleeliha efayita maasi erinaaya wa itthu sirina ekumi.

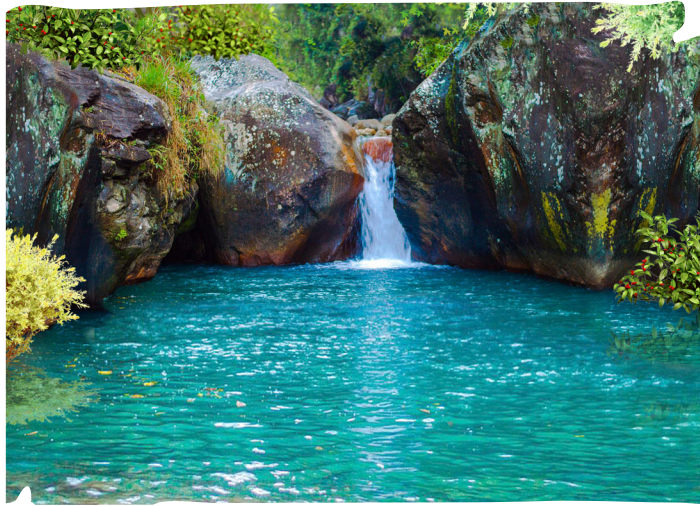


Mapuro muniphwanyaneya maasi

Maasi aniphwanyamneya mmuro, mmatthiyani, mmarattani, mpahari, vathi wa etthaya, mmeekuni ni mapuro makina.

Maasi manceenexa ookhala mulaponi ti ootuturya ni aniphwanyaneya mpahari.

Mpantta vakhaani ti maasi mariirya ni aniphwanyaneya mmuro, mmatthiyani ni mmarattani.



Ncampulo 1: Ephattuvelo ya maasi



Osuwele tho:

Maasi ootuturya annipittikuxeriwa wa maasi oowuryeya ottharihiwaka muvarelo a ovalaanya maakha ni maasi akhalihiwaka nto ooreerela owuriwa ni pinaatamu, muvarelo ola oniiriwa Tesalinisasawu.

Miphattu sa maasi mmuttettheni

Miphattu sa maasi ti mapuro atthu ni inama okhanlaaya oophwanya maasi.

Mmuttettheni ninnikhala woophwanya miphattu soovirikana sa maasi, ntoko nipuro nimphattuwa maasi, miro, matthiya, ihimye, ifontenaariya ni ituruneera.

Maasi khanikawanyeya ikhalelo imosaru, annikhala a mittetthe anitupha ikuluttu soorakamelana arowelaka maasi.



Ncampulo 3: Maasi onikhumenla wanattuttu



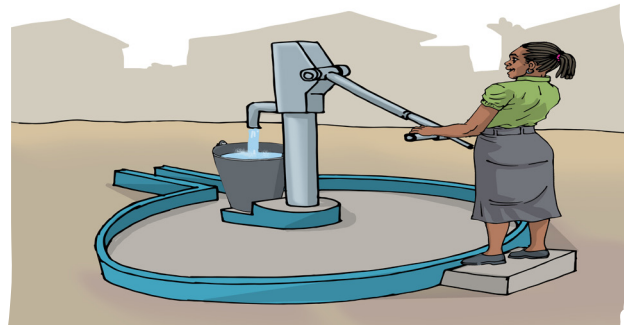
Ncampulo 4: Atthu ovarelaka muteko maasi omuro

Ihimye ni ifontenaariya

Maasi anivira vathi wa etthaya. Wa mittetthe vakhaani anoonanyaaya maasi oowuryeya vathi wa etthaya woohixerya, sinnithimpwa ihimye ni ifontenaariya wiira atthu akhalaneke maasi khula okathi.



Ncampulo 5: Ehime



Ncampulo 6: Ifontenaariyu ya miyoono

Maasi a ituruneera

Mittetthe sa mpooma ni mittetthe sikina soohaattamela opooma maasi anikhuma muturuneera.

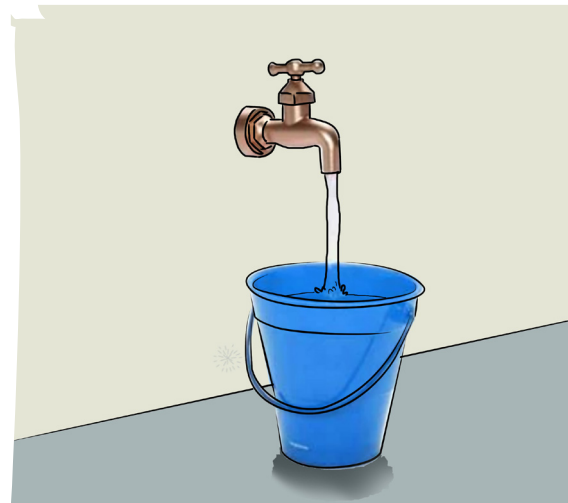
Oxikasawu, maasi anooreerihwa wiira akhwaase aximwaaxiitthu ni anaamunku, noomala anakayiwa mmawaani.

Maasi noomala oreerihwa, annikhala oowuryeya ni ooreerela owuriwa ni pinaatamu.

Mwaaxiitthu: ti itthu sirina ekumi ni sootepaxa oyeva sihinooneya ni mayitho.

Munku: ti axinama arina erutthu yoofinuwa ni yoorakama. Miyunku sikina sinikhala muhina mwa erutthu ya mutthu ni sinnitohela iretta, ntoko moowa.

Maasi ooreera: maasi ooreerela owuriwa ni pinaatamu.



Ncampulo 7: Maasi a ituruneera



Waanisuwela wiira:

Mmukhalo maasi ooreerela owuriwa ni apinaatamu ari vakhaani, ti vo, ohaana woovelela maasi.

Kahiyo wiira maasi mariirya ootheene aniphwanyaneya ti ooreerela owurya, okhala wiira imaara sinceene annikhala oowuutuwanyeya. Vanceenexa pinaatamu ti onipaka muutuwanyero wa maasi.



Waakhule makoho

Waakhule mukateerununi mwawo

1. Mpantta xeeni onoonaneyaaya maasi oowaataxa aniphwanyaneya mmukhalo?
2. Ti ivi miphattu sa maasi akhanle mmuttettheni mwawo?
3. Mphattu xeeni wa maasi onirumeeliwa owaani wawo?

Mananna a oreerhiwa maasi

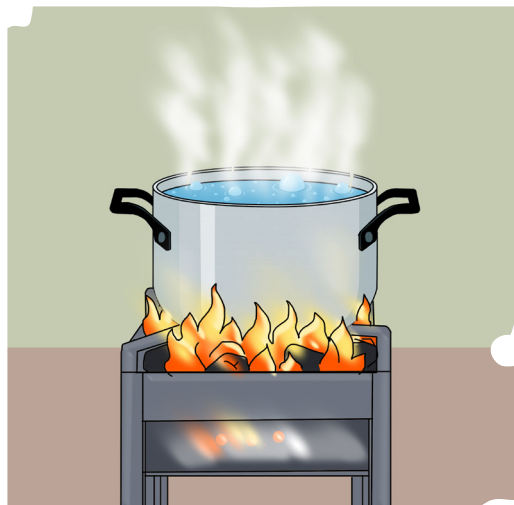
Mmukhalo sinoonaneya miphattu vakhaani sinivaha maasi ooreerela owuriwa ni apinaatamu ti vo, awo ahaana kweekwe oreerhiwa ahinatthi owuriwa.

Aakhala mananna manceene a oreerhiwa maasi akhanle okaphulela, oviiniwa, ohela murette ni okikitthiwa.

Wiira aphwanyaneye maasi oowuryeya, awo anookuttihiwa wala oheliwa murette.

1. Okhapulela

Ti mukhalelo wa oreerhiwa maasi onipakiwa owaani, anikuttihwa maasi mpakha oviluwa voophiyeraka iminuutu 5 wiira akhalaxe ooreerela owurya.



2. Ohela murette

Mulaponi mwahu oheliwa murette ti muvareliwo wa oree-rihiwa maasi onoonaneyaxa. Wa muvareliwo ola oniheliwa kolooru, oosuwelaxia okhala SERETEESA.

Meetiheryo a omuhela SERETEESA:

1- osariha etampa ya ephootiri ni SERETEESA

2- omuhela SERETEESA mmucomani mookhala iliituru 20 sa maasi

3- wootowela wiira otakanxereye oratteene ni okhuneela

4- olipelela iminuutu 30 wiira SERETEESA ovare muteko

5- noomala okathi owo wootheene, maasi ti oolikana wiira awuriweke

6- khula okathi vankelaaya owuriwa ohaana okhuneeliwa.

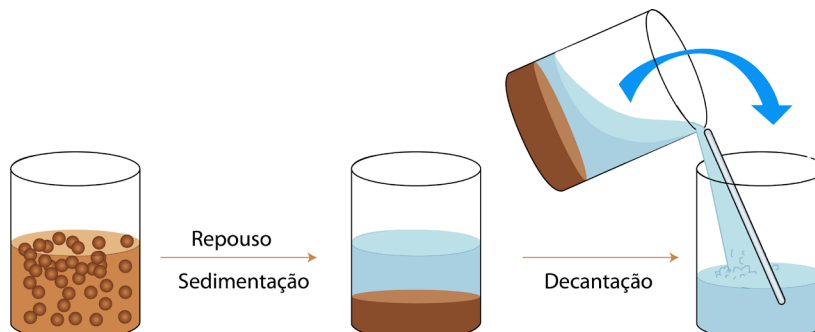


3. Oviiniwa

Oviina ti ovalaanya ikokhola ni maasi.

Wa nvalaanyo ola, itthu soolipa sinnikhala vathi ni maasi anikhala osulu.

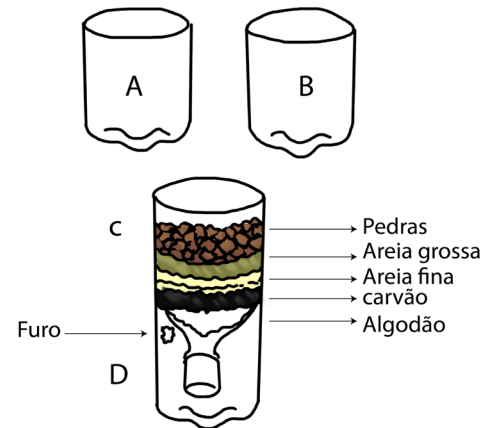
Maasi anikhala osulu khaniwuriwa maana ti oottuxereya. Siiso nto, noomala ovalaanyiwa ahaana oheliwa kolooru wiira akhale ooreerela owuriwa.



Ncampulo 10: Ennanna ya ohapulela maasi

4. Efilitaraswu

Efilitaraswu enniweryaniha ova-laanya ikokhola siniphwanyaneya mmaasini erumeeliwaka ekikittho. Maasi yaaviraka vakikitthoni ikokhola sinniphara nave awo anakhala oo-reera. Noomala okikitthiwa maasi awo ahaana oheliwa kolooru wiira akhale ooreerela owuriwa.



Ncampulo 11: Ennanna ya okhikhitta



Waakhule makoho

Waakhule mukateerununi mwawo

1. Vathi annooniheriwa mananna a oreeriha maasi.
 - Otakiherye olepa mukateerununi mwawo mananna a oree riha maasi anikhaliha ooreerela owuriwa ni pinaatamu.
 - i) Ookikitthiwa
 - ii) Ookaphuleliwa
 - iii) Ooheliwa kolooru
 - iv) Ooviiniwa ni ookikitthiwa
2. Omalelihe moolumo ni malove okaphulela ni kolooru:
 - i) Nihaana omuhela _____ noomala okikittha maasi wiira akhale ooreerela owurya
 - ii) Nihinatthimwa owurya maasi arinkaahu omuro nihaana _____ wala omuhela _____

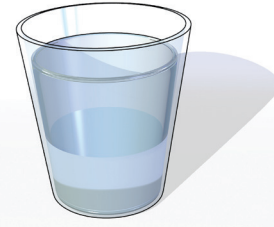
Ikhalelo sa maasi

Mmukhalo maasi anniphwanyaneya wa ikhalelo tthaaruu voo-ttharihelana ni nkupetteh onoonaneya: ekhalelo ya maasyeene, ekhalelo yoowuuma ni ekhalelo ya epheyo.

Ekhalelo ya maasyeene - wa ekhalelo ela maasi aniphwanyaneya wa mukhalelo woowryeya. ntoko maasi a eturuneera, a vahimyeni, a vafontenaariya, a epula, a mpahari, a mmuro, a vatthiyani, a varattani, a vatthi va etthaya.

Ekhalelo yoowuuma - wa ekhalelo ela maasi aniphwanyaneya oolipa, ntoko exeelu, maralala.

Vanceenexa, mittetthe sooriya, ni mittetthe sa mukerekhere wa osulu ni othi wa olumwenku, maasi aniphwanyaneya ari-neene mukhalelo wa exeelu.



Ncampulo 12: Maasi a ekhalelo ya maasyeene



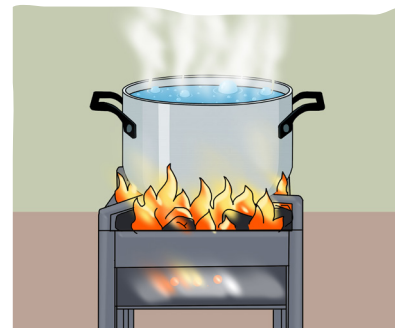
Ncampulo 13: Maasi a ekhalelo yoowuuma



Figura 14:

Ekhalelo ya epheyo - wa ekhalelo ela maasi aniphwanyaneya wa mukhalelo wa etthapwe, ntoko mwixi wa maasi ooviluwa ni meeku.

maasi yaaviluwaka mpantta mukina onnithatuwa etthapwe.



Ncampulo 15: Maasi wa ekhalelo ya epheyo



Waanisuwela wiira:

Maasi ti mureerelo wa ephattu woohoolaxa wa ikhalelo sa atthu, ti vo, woohi maasi kheevo ekumi. Wa maasi ootheene akhanle mulaponi, mpantta vakhaani ti ari oowuryeya. Ovikana ekapatti ya erutthu ya itthu sirina ekumi aniphwanyaneyama maasi.

Efayita erinaaya maasi wa itthu sirina ekumi

Maasi ti ooreerelaxa wa ikhalelo sa itthu sirina ekumi ni ti oohoolaxa enirela mpantta wa itthu sirina ekumi sootheene.

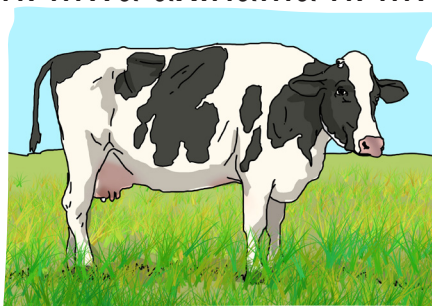
Wa ephome ya axinama ni isumu sa mihokorokho aniphwanyaneyamo maasi.

Maasi ti ookhalana efayita mwaha wiira ahaana miteko sinceene wiira erutthu yeetteke saana, ntoko okumiha itthu sootakhaliha erutthu ni ovukula maviheryo a erutthu.

Mpantta wa maasi aniwuryaahu annikhuma ni miyoso, ni mavi, ni naarettheelaka. Siiso, naahiwuryeke maasi ninookhala ookhulumuwa.

Mahiku ooviha erutthu ennimaleliwa ni maasi manceene, siiso nto ohaana owuriwa maasi manceene.

Macampulo ala anooniherya miiriirya maasi anipakaaya mwirutthi mwa axinama ni mwa mutthu.



Ncampulo 16: Emompe yookhalana maasi mwirutthuni



Ncampulo 17: Emompe ehirina maasi mwirutthuni

Okhulumuwa: ohjiiweryawerya mwaha wa erutthu ohikhalana maasi

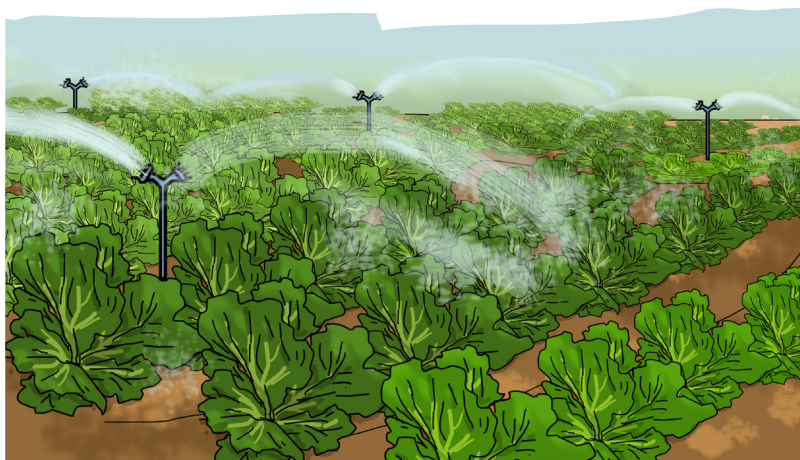


Ncampulo 18: Mwana ovuryaka maasi



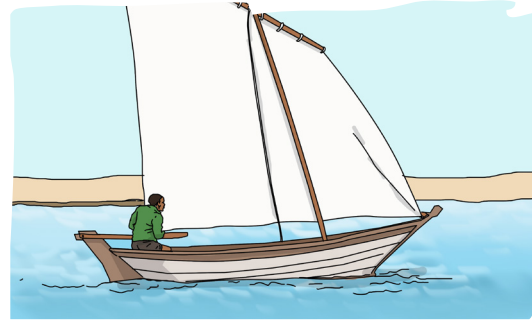
Ncampulo 19: Mwana ohirina maasi mwirutthuni

Macampulo ala anooniherya miiriirya maasi anipakaaya mwirutthi mwa axinama ni mwa mutthu.

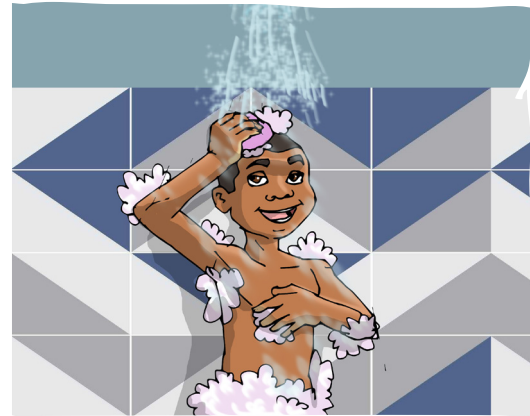


Ncampulo 20: Ekhuwarelo ya ematta

Yaathowaka maasi mwiri khasiniwerya ophuwela nnakhala wunnuwa, ti vo iyo sinnuma sinnakhwa. Siiso nto, ti vooreere-la okhuwari miri.



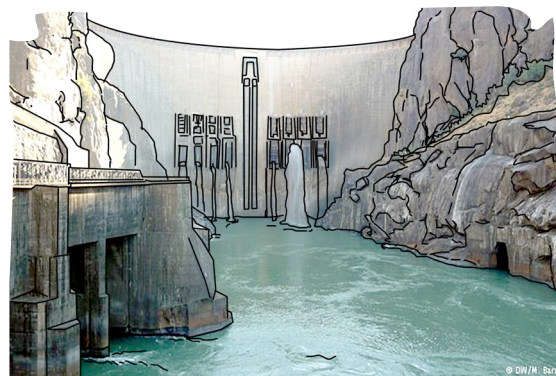
Maasi nave ti ooreerela wiira apakhiriweke atthu, marotta hata omiserya.



Ncampulo 26: Epakelo ya mirette, ekarafa ni mirette soomasyeene

Maasi annirumeeliwa opa-
ttuxiwa enerexiia nimpat-
tiheryaahu maluuxu mmawaani.

Ncampulo 25: Ettiyelo ya Maasi
wii Epakiwe Eneriishiya-HCB





Wuupuwele

Maasi oowuryeya ti maasi ooreerela owuriwa. Wiira akhale oowuryeya vannireerela okuttiha, okikittha, ohela murette, oviina ni okikittha.

Okuttiha ni ohela murette onnitthuniherya owiiva aximwaaxiitthu ni miyunku.

Maasi ti ooreerela owurya, waapakhira atthu ni marotta, omiserya, opattuxa enerexiia hata opakiwa mirette.

Ti yooreerela osuka maasi aniphwanyaneya mulaponi.



Mayeso

Waakhule mukateerununi mwawo

1. Vathianooniheriwa mananna a oreeriha maasi. Otakiherye olepa mukateerununi mwawo mananna a oreeriha maasi anikhaliha ooreerela owuriwa.

i) Ooviiniwa

ii) Ooheliwa murette wa kolooru

iii) Ookluttihiwa

iv) Ooviiniwa ni ookikitthiwa

2. Ohimye miteko miraru maasi anivareliwaaya wa apinaatamu.

3. Moota xeeni erutthu ya mutthu enimaleliwaaya ni maasi?

MPANTTA WA NISOMI

5

ETTHAYA

Mpantta ola, weyo onooxutta:

- Othothokola etthaya
- Wooniherya efayita etthaya erinaaya wa itthu soovirikana



Etthaya

Etthaya ti mpantta woowaataleleya wa elapo siniphwanyaneya itthu sa ephattu.

Etthu yoophattuwa ni yookhalana efayita yuulupale wa ikhalelo sa itthu sirina ekumi (mutthu, miri ni aximwaaxiitthu).

1. Makhalelo a etthaya

Etthaya enikawanyeya wa etthaya ya mpwette, ya oloko ni yootakanxereya.

Etthaya ya oloko

Ennooniherya okhalana mwaattelo munceene wa ihaava. Muthinto ola wa etthaya ti woonowela vanceene okhala wiira ennihiyerera ovira maasi voowaakuveya. Kahiyo etthaya yoo-reera olima.



Ncampulo 1: Etthaya ya mpwette

Aximwaaxiitthu: ti itthu sirina ekumi sinooneya ni ekaruma eniitthaniwa mikoroxikoopiya

Etthaya ya oloko

Ennooniherya okhalana mwaattelo munceene wa oloko. Muthinto ola wa etthaya ti woohinowela okhala wiira khenihiyerera ovira maasi manceene. Mwaha wa okhalana oloko munceece ti yoovila olima.

Yuuma vale ti yoolipa vanceene, ni ennooniherya minyatta.



Ncampulo 2: Etthaya ya oloko

Etthaya yootakanxereya

Ti etthaya yoopakanyeya wa mutakanxeyo woolikana wa ihaava ni oloko. Eyo etthaya yoonowela vakhaani okhala wiira ennihyerera ovira mpantta mukina wa maasi.

Etthaya yotakanxereya ti yoosareya maakha a vathi ni ti yoowunttelana vanceene vooreerela olimmwa.



Ncampulo 3: Etthaya yootakanxereya

2. Efayita etthaya erinaaya wa itthu sirina ekumi

- Etthaya ti mphattuvelo wa mulyiho wa miri;
- Etthaya ehaana efayita ya ophariha mitathaari sa mwiri;
- Etthaya ehaana efayita ya osuka maasi ni maakha a vathi sikhanye iyoolya sa miri;
- Etthaya ti nipuro anunnuwaaya aximwaaxiitthu;
- Etthaya ti nipuro anikhalaaya axinama ntoko enyakwata;
- Pinaatamu onnirumeela etthaya opakaka sooreerela soovi rikana, ntoko oteka impa, ixikola, ixipiritaali ni iparapaara.



Wuupuwele

- Etthaya ti mpantta woowaataleleya wa elapo.
- Etthaya enikawanyeya wa etthaya ya mpwethe, ya oloko ni yootakanxereya. ni khula muthinto wa etthaya ehaana makhalelo aya oosuwanyeya.
- Etthaya ya mpwethe ennihiyerera ovira maasi voowaakuveya.
- Etthaya ya oloko khenihyerera ovira maasi voowaakuveya.
- Etthaya yootakanxereya ennihiyerera ovira mpantta mukina wa maasi.



Mayeso

Waakhule mukateerununi mwawo

1. Ti exeeni etthaya
2. Ohinye mithinto miraru sa etthaya osomalaawo.
3. Ti exeeni etthaya yootakanxereya?
4. Etthaya ti mpantta woowaataleleya wa elapo.
 - a) Opake nluttaniho wa ekoluna A ni ekoluna B

Muthinto wa etthaya	Makhalelo
1. ya mpwethe	A. yoohinowela
2. ya oloko	B. yoonowela vakhaani
3. yootakanxereya	C. yoonowela

- b) Etthaya xeeni yooreerela olimmwa?
5. Efayita xeeni erinaaya etthaya wa itthu sirina ekumi? Ovahe miyoonihero miraru (3).

MPANTTA WA NISOMI

6

WIIRATTELA NI NLAKA

Mpantta ola, weyo onooxutta:

- Ohimya ilimalelo sa wiirattela mekhawe ni sa athu ootheene owaani hata mmuttettheni mwawo;
- Ohimya mananna a okhapelela mapuro onikhalaawo;
- Ohimyakasa ikaasoope sa okhalana ni ikokhola.



Olepe mukateerununi mwawo soolimalela tthaaru onii-raawo khula voosiisu waakhuma voolilini.

Erutthu ahu ehaana ekumi wiira nikhaleke oohakalala. Woowi eyo yiiraneye vannireerela otthariha ilimalelo sinceene sa wiirattela.

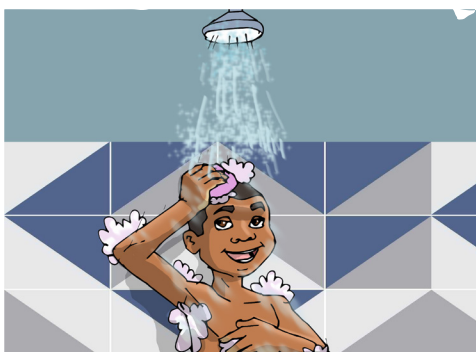
Ilimalelo sa wiirattela ti meettelo ootheene niniivahere-raahu ottharihela wiira nikhaleke akumi, ni annikhala a mekhawe hata a atthu ootheene.

Ilimalelo sa wiirattela mekhawe

Ilimalelo sa wiirattela mekhawe – ti ikaasoope ninkhalanaahu khula nihiku wiira erutthu ni ankhili ahu sikhaleke sikumi.

Iya ti ilimalelo vakhaani sa wiirattela mekhawe:

- Okuttha mayino khula nihiku, noomala olya wala inakhalaru imaara piili wa khula nihiku;
- Orapa khula nihiku ni esaphawu;
- Onyawa ni esaphawu, ohinatthi ovara iyoolya ni nookhuma oxoworo wala osintiina;
- Okothomolela muhina mwa ekookhwino okhunneene moononi Waaxamurya vanleesoni noohittakatta;
- Orupa vootepaxa wene oyeva ikhaleke iwoora thanu ni tthaaru (8);
- Opaka isepwere sa wookolela erutthu.
- Okattha ikuwo.
- Ovasa ikharari.



Ncampulo 1: Ilimalelo sa wiirattela mekhawe



Osuwele tho

Vannireerela kweekwe othikila ni orapiha makarikhwa wiira ahisareyemo makhurumela.

Makhurumela annittha iretta sinikhuma mmihaavani, mmattopheni wala wa axinama waathweelaka.



Waakhule makoho

Waakhule mukateerununi mwawo

1. Ohele X mapuro ari moolumo Ooreerela mwaha wa ilimalelo sa wiirattela:
 - a) Waaxamurya woohittiyela ephula ni eyano
 - b) Orapa mahiku ootheene
 - c) Orupa ni ikuwo soottakatta saataliweene voolilini
 - d) Otupha musoope
 - e) Okuttha mayino
 - f) Onyawa ni esaphawu

Ilimalelo sa wiirattela atthu ootheene

Ilimalelo sa wiirattela atthu ootheene ti meettelo niniivahe-reraahu ottharihela wiira nikhaleke akumi mwiimusini mwahu ni mmuttettheni.

Iya ti ilimalelo sa wiirattela atthu ootheene:

- Ovela mukintaali ni ota wa empa khula nihiku;
- Ovela musaala munisommwa;
- Olima malaxi mukerekhere mwa empa wala exikola;
- Orattela nipuwa na vaxikola ni musaala munisommwa;
- Orattela exoworo wala esintiina;
- Ohinya wala orusa vanlakani wala mmirini.



Ncampulo 2: Ilimalelo sa wiirattela atthu ootheene

Mananna a okhapelela munikhaliwamo

Mukhalo onnirukurerya onnireerela okhapeleliwa. Siiso, nihaana okhapelela empa ahu, exikola ahu ni muttethe ahu.

Owaani wahu nihaana otthariha meettelo ala:

- Okwesa mpaani, namukhuluwuru ni oxoworo hata osintiina;
- Okwesa mukerekhere wa empa;
- Omalamaliha maratta a maasi mukintaali ni ota wa ekintaali;
- Okhupa ikokhola mukintaali ni ota wa ekintaali.

Oxikola wahu nihaana otthariha meettelo ala:

- Okwesa musaala ni vapuwani wa exikola;
- Orattela ixoworo wala isintiina;
- Ohuntakasa iritta sa miri;
- Omwarexela ikokhola mapuro ooreerela;
- Onyawa nihinatthi ni noomala olya;
- Ottiyela isintiina.

Mmuttetheni mwahu nihaana otthariha meettelo ala:

- Waala ni okhapelela miri;
- Ohiitthela ikokhola mmukhulakuni;
- Okhaliherya okwesa mapuro aniviriwa;
- Ohirusa ni ohinya muniviriwa nnakhala mmwirini.



Ncampulo 7: Ikaasoope sa okhalana ni ikokhola

Ikaasoope sa okhalana ni ikokhola



Mukhalo onnirukurerya onnikhala woohisiveleliha mwaha wa ikokhola.

Ikokhola ti itthu sootheene sinittikheliwa ota mwaha wa ohi-reerela ntoko itathela sa iyoolya, iphootiri ni apalaaxitiku.

Ikokhola sinnikacamiha mavirelo, sinniruuhelela wunkha pure ni otothela iphepele, mantuulu, makhule ni ipwilimwithi sikhandle ti iniraviha iretta.

Wiira nikhaleke mapuro oosivela, nihaana:

- Ohela ikokhola musaakhoni, otthuka oratteene ni okuxa orowiha okontentooreni wa ikokhola;
- Othipela ikokhola wala omwarexela mapuro oorerela;
- Ohithukumanya ikokhola owaani;
- Ohimwarexela ikokhola mapuro aniviriwa.



Ncampulo 7: Ikaasope sa okhalana ni ikokhola

Osuwele tho:



Nihaana ovalaanya ikokhola nittharihelaka muthinto wa it-sinooneyamo ntoko iwarakha, iviituru, ilaata ni apalaaxi-wiira sirumeeliwe tho wala sipakiwe ikina isya.

Waakhule makoho

1. Ocampule mukateerununi mwawo nnanna nimosana na okhapelela mukhalo osomalaawo.



Wuupuwele:

Ilimalelo sa wiirattela ti meettelo ootheene niniivahereraahu ottharihela wiira nikhaleke akumi.

Ilimalelo sa wiirattela sinnikhala sa mekhawe ni sa atthu ootheene.

Mukhalo onnirukurerya onnireerela okhapeleliwa. Siiso, nihaana okhapelela empa ahu, exikola ahu ni muttethe ahu.



Mayeso

Waakhule mukateerununi mwawo

1. Omalelihe moolumo anittharelana orumeelaka malove mekhawe ni atthu ootheene:
 - a) Okuttha mayino ti elimalelo ya _____
 - b) Okwesa musaala munisommwa ti elimalelo ya _____
 - c) Onyawa ti elimalelo ya _____
 - d) Ohirusa mmwirini ti elimalelo ya _____
2. Olepe ikaasoope piili sa okhalana ni ikokhola.
3. Olepe mananna mayili a okhapelela mukhalo mmuttettheni.

MPANTTA WA NISOMI

7

IYOOLYA

Mpantta ola, weyo onooxutta:

- Ohimya iyoola sa muuttethe awo;
- Othukumanya iyoolya ottharihelaka muthinto aya;
- Oleeliherya efayita iyoolya sirinaaya wa ekumi;
- Ohimnya ikaasoope sa okhalana ni iyoolya.



1. Iyoolya soowaattelaxa mmuttettheni

Eyoolya – ti ele yootheene mutthu onilyaawe ni oniwuryaawe wiira wiikhaleleke.

Mmuttettheni nookhala woophwanya mithinto soovirikana sa iyoolya:

Iyoolya sa mphattu wa inama, ntoko: ihopa, mixoxo, enama, mooce ni ekeexu, mukaka.



Iyoolya sa mphattu wa mathaapa, ntoko ekhoovi, alufaase, kharaka, ikhutte, mattuvi, erepolyu ni mihokorokho.

Ncampulo 2: Iyoolya sa mphattu wa mathaapa



Wiikhalela: ocaaliwa okhala

Iyoolya sa mphattu wa imineraali, ntoko maakha ni maasi



Ncampulo 3: Iyoolya sa m phattu wa imineraali (maasi ni maakha)



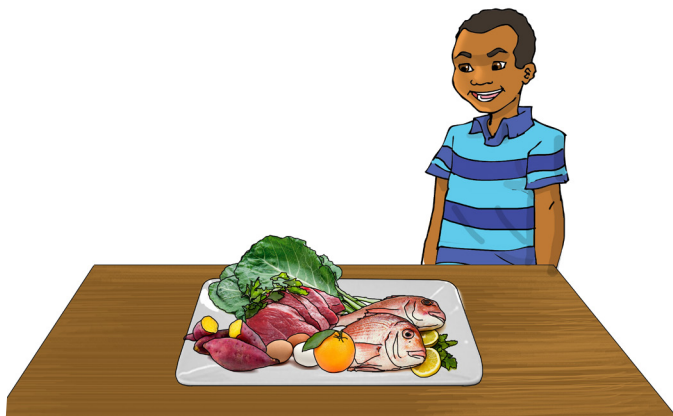
Waanisuwela wiira:

Maasi annoonaneya okhala oowaattelaxa murutthuni mwa itthu sirina ekumi ti vo akhanlaaya eyoolya yoohoolelaxa wa ikhalelo sahu.

2. Olya woolikaniheya

Wiira niphwanyeke ekumi, ti vooreerela wiira nilyeeke voolikaniherya. **Olya woolikaniheya ti vale atthu anilyaaya vakhaani vakhaani wa sootheene.**

Khiivo eyoolya mekhayaru erina milyiho sootheene erutthu ahu eniphavelaaya. Ti vo, **vannireerela ovirikaniha iyoolya sahu.**



Wiira erutthu awo ekhale ekumi ti vooreerela olya voolikaniherya, opakanyihaka mihokorokho, myaakattho, mathaapa, mukaka, exima, itthyaka (musoro, ikhutte, sooxa, nakhuwo, epwiri), enama, ihopa ni mooce.

Ohiya vo, nihaana okhalana nnakhala imaara tthaaru sa olya wa khula nihiku sikhanye eyoolya ya voosiisu, eyoolya ya othana ni eyoolya ya ohiyu.

Makhuru a iyoolya

Sittharihiwaka miteko iyoolya sinivaraaya mwiirutthuni, iyo sinnithukumanyiwa wa: iyoolya sa ikuru, iyoolya sookhomaaliha ni iyoolya sinivarelela.

Iyoolya sa ikuru – ti iye sinivaha ikuru sa osoma, opaka isepwere sa wookolela erutthu, othweela ni ovara muteko ni sinniphwanyaneya wa:

- Exima ya nakhuwo, ya musoro, ya meelee, ya nootti, ya etiriku;
- Mattyookhwa, kharaka;
- Iyoolya sa makhura ntoko manteeka, makhura a ekole;
- Esuukhiri, muhali, oravo;
- Itthyaka sa mattuvi, akoroxo.



Iyoolya sookhomaaliha – ti iye sininnuwiha ni sinireherya erutthu ahu. Iyo sinikhaliherya erutthu ahu wunnuwa. Iyoolya iya ti ikhutte, mattuvi, itthyaka, epwiri, enama ya enyompe, ya epuri, ya mwalakhu, ya ekuluwe, ihopa, soolyiwa sa mpahari, mooce, mukaka ni ikina.



Ncampulo 6: Iyoolya sookhomaaliha

Iyoolya sinivarelela – ti iye sinaakhiherya erutthu wa iretta. Iyoolya iya ti sookhalana vanceene maakha ni ivitamiina. Myoonihero sa iyoolya sinivarelela ti, **mihokorokho** ntoko paphaya, eraranca, enika, enanaasi, emanka ni kulukho, **mathaapa** ntoko ntikwa, mukakana, ekhutte, ekhoovi, alufaase, myaakattho ntoko esenora, exuwaari, esepola, muxiri, nantthatto ni pimentu ni maasi.



Ncampulo 7: Iyoolya sinivarelela



Mayeso

1. Iyoolya ninlyaahu sinnikhala sa mphattu wa inama, wa mathaapa ni wa imineraali.

Owehexexe macampulo ni olepe mukateerununi mwawo ephattu ya khula muthinto wa iyoolya



2. Omalelihe etapela ya iyoolya sinoonihariwa vathi ottharihelaka ephattu aya:



Origem Vegetal	Origem Mineral	Origem Animal

3. Owehexexe eyoolya ni waakhule mukateerununi mwawo:
- Iyoolya xeeni sa mphattu wa mathaapa ononaawo mparathuni?
 - Ti ivi iyoolya sa mphattu wa inama?



Efayita ya iyoolya

Iyoolya ti sookhalana efayita wiira erutthu ahv evareke saana muteko, siiso nto, ohaana ottharihiwa olya woolikaniheya. Olya woolikaniheya onniruhela makhalelo ooreera a ekumi ni a erutthu.

Iyoolya sinnivaha ikuru, sinninaakhiherya wa iretta ni sinniruhela wunnuwa wa erutthu.

Nihaana orapiha saana iyoolya otepaxa wene iye sinlyiwa voohaapeyiwa.



Waakhule makoho

Waakhule mukateerununi mwawo

1. Ti exeeni olya woolikaniheya?
2. Mwaha wa exeeni nikhanlaahu oolya?
3. Oluttanihe muthinto wa eyoolya ni muteko onivaraaya murutthuni.

Ekoluna ya 1rya Muthinto wa eyoolya	Ekoluna ya 2li Muteko
A. Iyoolya sinivarelela	1. () Ovaha ikuru
B. Iyoolya sa ikuru	2. () Waakiherya iretta
C. Iyoolya sookhomaaliha	3. () Wunnuwiha erutthu ahu.

4. Wa iyoolya sinttharelana, ohele **K** wa sookhomaaliha, ohele **V** wa sinivarelela ni ohele **I** wa iyoolya sinivaha ikuru.

- | | | |
|-------------|--------------|---------------|
| () esenora | () ehopa | () leraranca |
| () mukaka | () enama | () mwalakhu |
| () makhura | () ikhutte | () epaphaya |
| () enika | () alufaase | () emanka |



Wuupuwele

Iyoolya sinnithukumanyiwa sittharihiwaka ephattu aya, sikhanelle iyoolya sa mphattu wa inama, wa mathaapa ni wa mphattu wa imineraali.

Mwaha wa muteko onivaraaya murutthuni, iyoolya sinnithukumanyiwa wa iyoolya sa ikuru, sookhomaaliha ni sinivarelela.

Ti vooreerela otthariha olya woolikaniheya wiira erutthu ahu ekhaleke ekumi.



Mayeso

Waakhule mukateerununi mwawo

- Otakherye olepa nsina na khula eyoolya wa ekoluna enireerelaaya: mukaka – ehopa yoowuuma – mattyookhwa – mooce – enanaasi – karapaawu – exuwaari – niwuryo – enama ya epuri – enama ya mwalakhu – olapa – nootti.

Mphattu wa inama	Mphattu wa mathaapa

- Olepe mukateerununi mwawo, iyoolya 5:

Sinoosivela olya:	Sihinoosivela olya

- Olepe mukateerununi mwawo, iyoolya tthaaru okhanlaawo woolya woohaapeyiwa ni tthaaru oniphavelaawo waapeya toko wiira olye.
- Sinikhuma woowi ikuru sootheene sootthuneya wiira okhaleke?
- Iphattu xeeni sinikhalanaaya iyoolya?

6. Owehexexe macampulo ni othanlele iyoolya sinoonaneya ottharihaka mphattu aya, wa mathaapa (Th), wa inama (N) ni wa imineraali (M):

7. Olepe masina a iyoolya piili sikhanye mmuttettheni mwawo, sa mphattu wa:

- a) inama b) mathaapa

8. Omalelihe etapela

Makhuru a iyoolya:	Masina a iyoolya:
sinivaha ikuru	
sinaakiherya iretta	
sininnuwiha	

9. Ikoopuho sikavi sa maasi oniwuryaawo wa khula nihiku?

- a. () Nkiniwurya maasi manceene;
 b. () Soohihiphiya ikoopuho xexe;
 c. () Ovikana ikoopuho thanu.

10. Imaara ikavi wa khula esumana onipakaawo isepwere sa wookolela erutthu?

- a. () Mahiku ootheene;
 b. () Imaara piili wala ovikana;
 c. () Nkimpaka hata esepwere.

MPANTTA WA NISOMI 8

MIYOONELO NI MIPANTTA SA MIYOONELO

Mpantta ola, weyo onooxutta:

- Osuwelela mipantta sa miyooneelo;
- Olikaniherya mipantta sa miyooneelo ni miyooneela saya;
- Ottharihela mananna a orattela mipantta sa miyooneelo;
- Oleeliha efayita ya mipantta sa miyooneelo.



Ohimye mpantta wa erutthu awo enoovaherya wiiwa mikhi-tto.

Erutthu ahu ennivaanela ni sootheene sinnirukurerya mwaha wa mipantta sa miyoonelo.

Ti mwaha wa mipantta sa miyoonelo niniweryaahu wiiwa muusika, ninoonaahu wunkhela ni osiva eyoolya, ninoonelelahu wakhala wiira maasi aaviha wala aariirya.

1. Mipantta sa moonelo

Erutthu ahu yookhalana mipantta mithanu sa miyoonelo sikhanye: niitho, naaru, ephula, erapala ni nlumi.

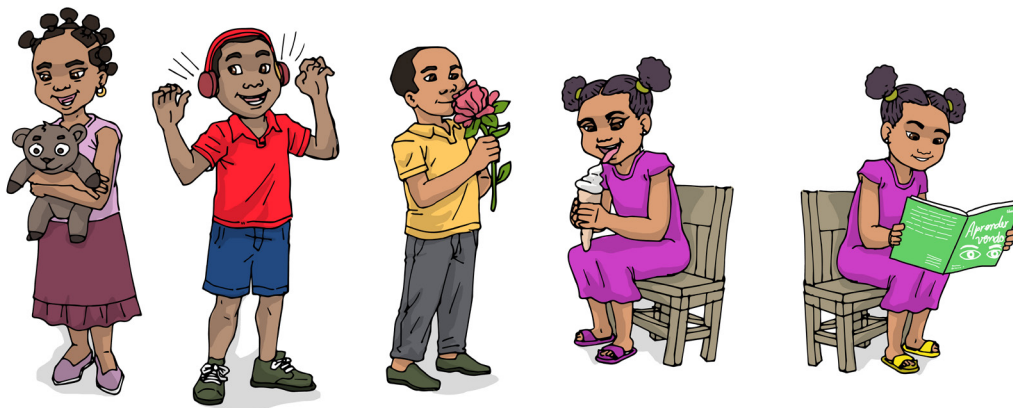
Niitho ti mpantta onivaherya **moonelo**.

Maaru ti mpantta onivaherya **mwiiwelo**.

Ephula ti mpantta onivaherya **munkhelo**.

Erapala ti mpantta onivaherya **mwaapalelo**.

Nlumi ti mpantta onivaherya **esivelo**.



2. Miteko sa mipantta sa miyoonelo

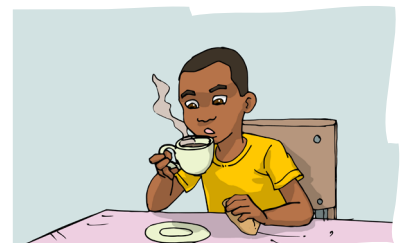
Niitho – ti mpantta onitthuniherya woonna sootheene sinnirukurerya, ntoko axipalame avavaka, makhwili a ithutu, ikhalo sa itthu ni mihokorokho soottokottha mmwirini.

Naaru – ti mpantta onnitthuniherya wiiwa masu munikhalaahu, ntoko oruma wa telefooni, owuwa wa mwalapwa, onyakula wa paakha.

Ephula – Ola mpantta onnitthuniherya woonna munkhelo wa itthu sinnirukurerya, ntoko munkhelo wa ithutu, iperufuume ni wunkhela wa iyoolya.

Erapala – ti mpantta onnitthuniherya osuwelela wakhala wiira onooriia wala onooviha, wakhala wiira ekaruma ti yoo-thererya wala yoowoma, ti yoolipa wala yoowoolowa.

Nlumi – ti mpantta onnisuweliha esive-loya eyoolya, ntoko wakhala wiira eyoolya ti yoosiva, yoowaawa, yootuturya wala yoonyuunya.





Osuwele tho!

Naaweryiwaka kamasi, imaara sinceene khaninoona osiva eyoolya hata wunkha okhala wiira moonelo wa wunkha onnikhaliherya nave woona osiva.



Waakhule makoho

Ohele X vari moolumo ooreerela.

Mipantta mithanu sa moonelo osomalaawo ti:

1. Os cinco sentidos que estudaste são:
 - a) maasi, nthuko, oviheriha, oriirya, oviha _____
 - b) moonelo, mwiiwelo, mwaapapelo, esivelo ni munkhelo _____
 - c) yoosiva, yoowaawa, yoonyuunya, yootuturya, yoosoosa _____
 - d) mayitho, maaru, ephula, erapala, nlumi _____

2. Mpannta xeeni onnivaherya owerya woona oviha?
 - a) Niitho _____
 - b) Nlumi _____
 - c) Erapala _____
 - d) Ephula _____

3. Moonelo wa munkhelo onnitthuniherya osuwelela:
 - a) Munkhelo wa itthu _____
 - b) Esivelo ya itthu _____
 - c) Eviheryo ya itthu _____
 - d) Masu a itthu _____

3. Mananna a okasoopela mipantta sa miyoonelo

Nihaana okasoopela mipanttha sa miyoonelo wiira sivareke saana muteko aya. Ti vo, vannireerela otthariha mananna ala:

Mayitho



- Osoma mapuro ookokola;
- Owaha etelevisaw wala omwetta viitiyu keemi okhanleene mapuro ookokola;
- Ohivuta mayitho ni matata oottakatta;
- Ohiwehexexa nsuwa;
- Ohaattamela etelevisawu nnakhala okhala vakomputatoorini okathi munceene.

Maaru



Ncampulo 9: Ikaasoope sa okhalana ni maaru

- Orapiha waamaaru ni esaphawu okathi wa orapa;
- Ohihela ifooxiforo, etampa ya ekaneta, mitathi ni itthu sikina waamaaru;
- Ohiwaha etelevisawu ni nsu noowuncereriwa;
- Ohiiwelela muusika ni nsu nnwuncereriwa.

Ephula

- Ommilela kamasi vanleesoni nohittakatta;
- Orapiha mphulani ni maasi ooreera noomala ommila kamasi;
- Onyawa noomala ommila kamasi.



Ncampulo 10: Ikaasoope sa okhalana ni ephula

Erapala

- Orapela esaphawu khula mahiku.
- Ohikhala okathi munceene vansuwani.
- Okattha ni owara ikuwo sohittakatta.



Ncampulo 11: Ikaasoope sa okhalana ni erapala.

Nlumi



Ncampulo 12: Ikaasoope sa okhalana ni nlumi

- Okuttha mwaano, mayino ni nlumi khula nihiku;
- Otaphwela vakhaani vakhaani wiira ohiilume.

4. Efayita ya mipantta sa miyoonelo wa ikhalelo sa mutthu ni axinama akina

Mipantta sa miyoonelo sinnimutthuniherya pinaatamu ni axinama akina osuwelela itthu siri siniiraneya: waavihaka wala waariiryaka, waankhaka wala waankhelaka, yaasivaka wala yaanyuunyaka, ni sikina.

Sinnitthuniherya nave osuwela yaakhanleene ehasara wala nnaari.

Wa axinama akina, miyoonelo sinnakhaliherya wiisuwelela mapuro anikhalaaya, wa ovaanela, olya, wiixaakhiherya, yunnuwihaka okhala waya.

Nihaana waakhaliherya ni nttittimiho atthu oorakala.



Osuwele tho!

Erapala ti mpantta woowunnuwaxa wa erutthu ya mutthu.



Wuupuwele

- Mipantta sa miyoonelo sinnisuweleliha sootheene sinnirukurerya.
- Pinaatamu orina mipantta mithanu sa miyoonelo sikhhanle: niitho, naaru, erapala, ephula ni nlumi, sikhhanle ti inisuweleliha moonelo, mwiiwelo, mwaapapelo, munkhelo ni esivelo.
- Wiira mipantta sa miyoonelo sivareke saana nihaana okhala lana ikaasoope ntoko ohihela mitathi owaruni, osoma mapuro ookokola, orapa mahiku ootheene, okuttha mayino khuluwuru ni nlumi mahiku ootheene ni ohiweha etelevisawu wala weeta iviitiyu keemi iwoora sinceene.
- Mipantta sa miyoonelo sinnimukhaliherya pinaatamu ni axinama akina osuwelela sinikhumelela.



Mayeso

Waakhule mukateerununi mwawo

1. Oluttanihe mipantta sa miyoonelo ekoluna A ni miteko saya ekoluna B.

Ekoluna A

Mpantta wa moonelo
1. Ephula
2. Nlumi
3. Niitho
4. Erapala
5. Naaru

Ekoluna B

Muteko
A. Woonu oviha wala oriirya
B. Woonu osiva
C. Woonu wunkhela
D. Oweha itthu
E. Wiiwa muusika

2. Ohimye ikaasoope piili sa okhala ni mayitho
3. Olepe mukateerununi mwawo efayita mipantta sa miyoonelo erinaaya wa axinama.

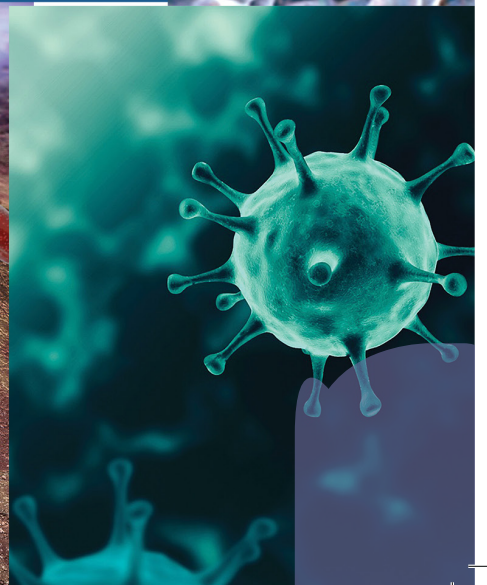
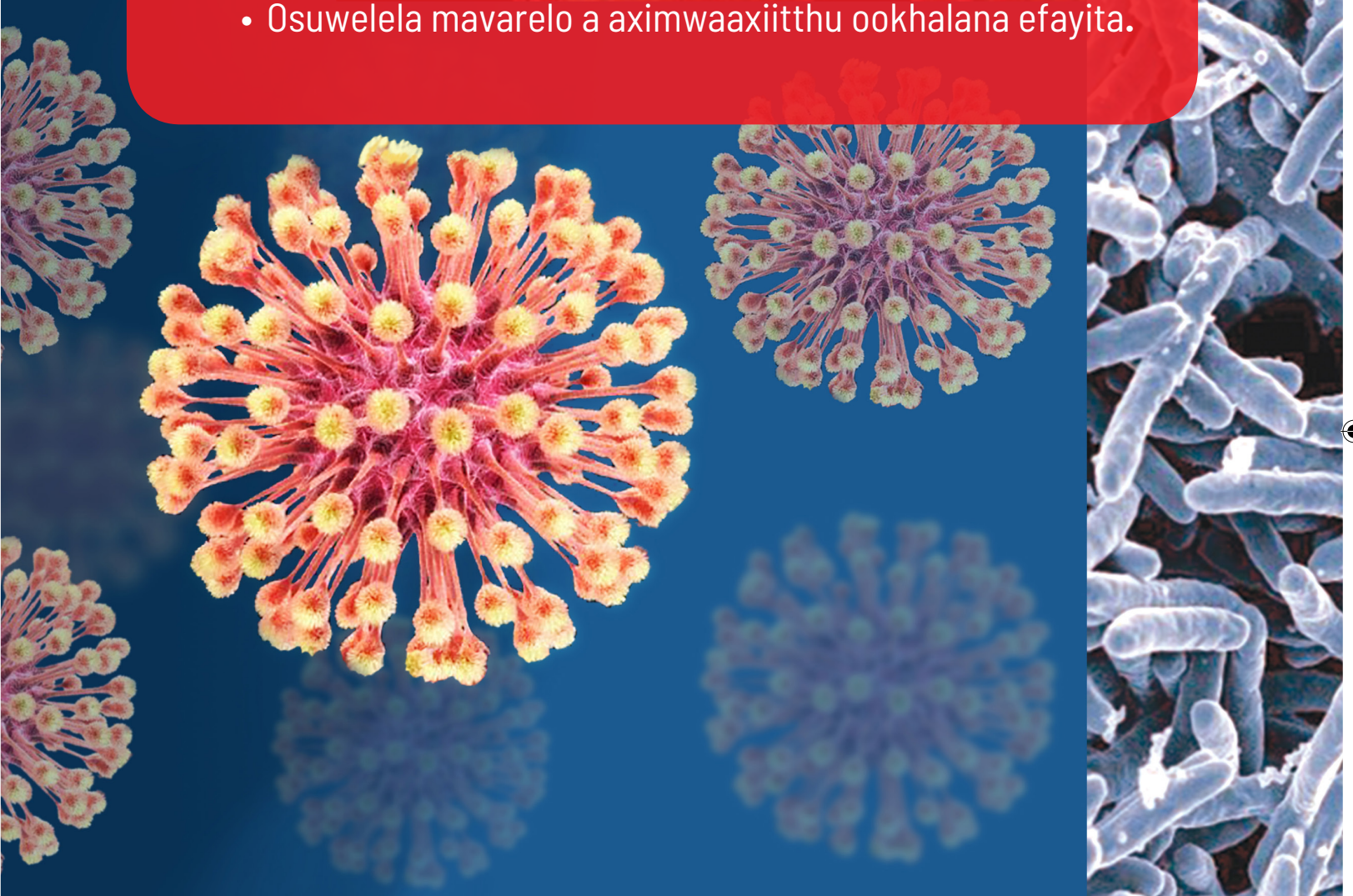
MPANTTA WA NISOMI

9

EKUMI

Mpantta ola, weyo onooxutta:

- Oleeliha ti ixeeni aximwaaxiitthu;
- Ohimya iretta sinittapulihiwa ni aximwaaxiitthu;
- Osuwelela mavarelo a aximwaaxiitthu ookhalana efayita.



1. Aximwaaxiitthu

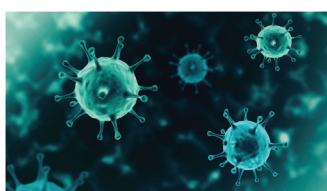
Wooxutta wiira mmukhalo sookhala itthu sirina ekumi ni itthu sihirina ekumi. Aximwaaxiitthu ti itthu sirina ekumi sootepaxa oyeva sihinoooneya ni mayitho. Itthu iyo sinooneya yaarumeeliwaka ekaruma enniitthaniwa mikoroxikoopiya wala yaarumeeliwaka eluupa.



Ncampulo 1: Mmiravo owehawehaka ni mikoroxikoopiya

Mikoroxikoopiya ti ekaruma erina muteko wa wunnuwiha icampulo sa itthu simmumula wala itthu sihimmmumula sihinoooneya ni mayitho.

Aximwaaxiitthu annikhalana makhalelo ni mannuwelo oovirikana ni anithukumanyiwa wa mithinto mixexe, ntoko vanooniheriwaaya vancampuloni:



Ncampulo 2: Aximwaaxiitthu a iretta.

Aximwaaxiitthu anikhala mapuro ootheene, mmaasini, musulu, mutthayani ni mwiirutthuni mwa itthu sirina ekumi (mutthu, axinama akina ni miri).

Mmukhalo nihaavo nikhuru na aximwaaxiitthu anittapuliha iretta, awo aniiriwa aximwaaxiitthu a iretta ntoko viiru onimuttapuliha KOVID-19, porotosowaariyu onimuttapuliha malaa-riya, epateeriya enimuttapuliha koolera.

Aximwaaxiitthu akina ti ookhalana efayita wa ikhalelo sa mutthu ni itthu sikina sirina ekumi, awo aniiriwa aximwaaxiitthu oohikhala a iretta. ntoko aximwaaxiitthu anipakaniwa iphaawu, yookurti ni ekeexu.



Mayeso:

Ikaruma

Muhokorokho mmosa (eraranca, emanka wala limawu)
Etixela ya palaaxitiku

Mavarelo

Ohele muhokorokho mutixelani ni okhuneele. Ohiye esumana ntero noomala owehe.

Moonele xeeni ophwanyalaawo?

Mmaliheryo

Noomala esumana muhokorokho onoorowa okumiherya epante yootteela eniitthaniwa ekuttuxi. Ekuttuxi ti efunku.

2. Iretta soottapulihwa ni aximwaaxiitthu

Pinaatamu ookhala oowupeeriwa ni aximwaaxiitthu ni onawereyiwa. Imaara sikina eretta ennikhala yootepa ni mutthu aahilooliwe vooreerela onimookhwa.

Aximwaaxiitthu annikela mwiirutthuni mwaha wa maasi ni iyoolya sookhalana aximwaaxiitthu a iretta voopaciwa ni mata-ta nnikelihaahu owanuni hata ni nrapala.

Mulaponi mwahu, iretta sootepaxa woonaneya sinittapulihiwa ni aximwaaxiitthu ti: koolera, elapaha, naakothokotho, malaariya, SIDA, xilape, ovele, KOVID-19.

Malaariya

Malaariya eretta yoosuwelaxiwa mmamittettheni mwahu.

Eyo eretta enittapulihwa ni mwaaxiitthu oniiriwa palaximootiyu ni onihkala mwiirutthuni wa epwilimwithi ni olya wawe onnula ephome ya atthu.

Mutthu ookhalana malaariya onnooniherya inenero iya:

- Oviha vanceene erutthu, oriiriwa ni othukumela vanceene
- Owereya mmakhuvani
- Owereya muru
- Wooceyasa
- Ohikhalana munkhelo wa olya

Mananna a omusyaka malaariya

- Orupa muhina mwa moskiteera ookhomeliwa saana.
- Wuheela maratta ni malitti ari mukerekhere wa empa.
- Olima malaxi ari mukerekhere wa empa
- Owala ixanela ni mikhora otepaxa wene okathi wa imakaaripi.
- Okumihasa ilaata, iphootiri, ipenewu wiira sihithukumanye maasi a epula.



Osuwele tho

Malaariya eretta yoowoopihaxa. Aahilooliwe mutthu on-nookhwa. Ti vo, ohaana voohipiseya oveleeliwa oxipiritaali mutthu onooniherya inenero sa malaariya wiira alooliwe.

Xilape

Xilape eretta yooraveya enittapulihwa ni ifunku ni vootepaxa ehaahooxa anamwane.

Exilape enniphwanyeya mukathani mwa metto, mmakarikhwani, mmuruni ni mwiirutthi mootheene.

Mutthu ookhalana xilape onnooniherya inenero iya:

- Oneeniwa vanceene mapuro ookhala xilape;
- Xilape wakhala mmuruni ikharari sinnimora ni munnittwee lelamo;
- Xilape wakhala mwiirutthuni onnikhumiha makhwatta;

Yooraveya – enikhuma wa mutthu emutuphelaka mutthu mukina.

- Xilape wakhala mmakarikhwani awo anniriipa, annuukumala ni annkhweya wunteya.

Mananna a osyaka exilape

- Orattela kweekwe makaririkhwa ni ikharari;
- Orapa ni esaphawu mahiku ootheene;
- Othikila makharu wiira ahithukumanye makhurumela;
- Ohoolihana evasero, nansoolo hata ikuwo ni mutthu ookhalana xilape;
- Ohikapattana ni mutthu orina xilape.



Waakhule makoho!

Waakhule mukateerununi mwawo

1. Moota xeeni akhanlaaya oowehiwa aximwaaxiitthu?
2. Ti ixeeni aximwaaxiitthu a iretta?
3. Ohimye iretta piili sinttapulihiwa ni aximwaaxiitthu.
4. Ti avi mananna a waasyaka aximwaaxiitthu?

3. Mavarelo a aximwaaxiitthu ookhalana efayita

Kahiyeno aximwaaxiitthu ootheene ari mmukhalo anaattapuliha iretta apinaatamu.

Aakhala aximwaaxiitthu ookhalana efayita wa ikhalelo sa atthu.

- Ifunku sikina sinnivareliwa muteko wa opakiwa iphaawu ni ipoolu, serevexa, eviinyu, mahewu ni soowurya sikina.

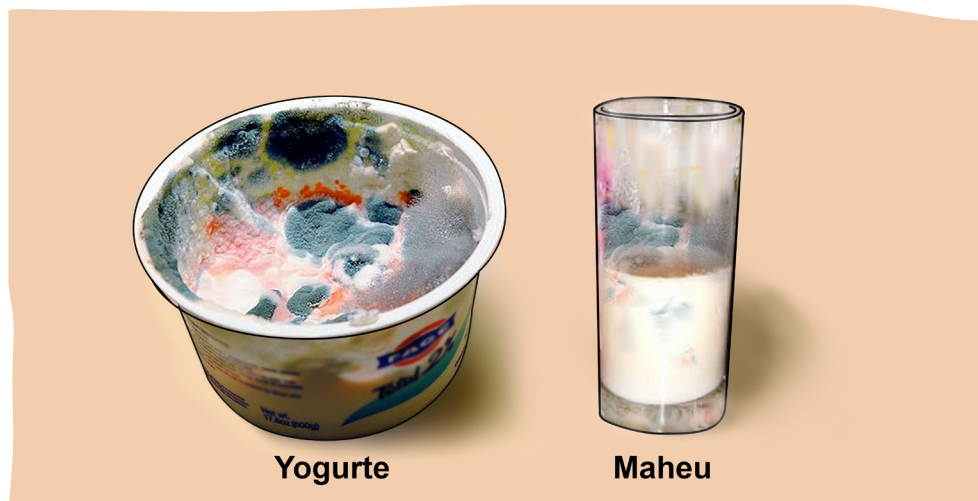


Waanisuwela wiira:

Wa opakiwa ephaawu enirumeeliwa efurumento erina mu-
thinto wa ifunku sininnuwiha iphaawu wala ipoolu ni sinakha-
la sooravureya.

Ephaawu yannuwa ehinatthi wooxiwa eniiriwa ephaawu
yoolevantari ni mukhalelo ola oniiriwa eferementasawu.

- Aximwaaxiitthu vakhaani annipittikuxerya mukaka wa manteeka, ekeexu ni yookurti.
- Aakhala aximwaaxiitthu anikhaliherya oruweriha etthaya.
- Aximwaaxiitthu akina anivareliwa wa opakiwa mirette.



Yogurte

Maheu

Sooravureya: soowoolowa, sooveya

yoolevantari: ekhitta ya etiriku ehunnuwa wala ehuncerereya



Osuwele tho

Muleeliho wa mupakelo wa ephaawu

Itthu sinkelamo:

Ekilokaraama 1 ya ephepa ya etiriku

Ekhwiyeri ekhaani 1 ya maakha (onisivelaaya)

Ikhwiyeri sikhaani 2 ya liviriina (eferemento ya iphaawu)

Maasi

Mananna a opaka

Otakanxe ephepa ya etiriku, maasi, maakha ni eferemento ni okhatte oratteene. Ohiye olipelelaka vakhaani. Ekhitta ya etiriku enoorowa wunnuwa mwaha wa eferemento muthinto wa efunku eninnuwiha.

Voottharelana othikileke ni opakeke ipoola sikhaani sikhaani ni ohiye tho sinnuwe.

Efoorunu yavihaxa ohelekemo ipoola iye sikhaani sa iphaawu opakalaawo wiira sittokotthe.



Wuupuwele

Aximwaaxiitthu ti itthu sirina ekumi sootepaxa oyeva ni sihi-nooneya ni mayitho.

Sookhala mithinto mixexe sa aximwaaxiitthu: viiru, epateeriya, porotosowaariyu ni ifunku.

Aximwaaxiitthu anniphwanyaneya musulu, mmaasini, mutthayani ni mwiirutthuni mwa itthu sirina ekumi ni sihirina ekumi.

Aximwaaxiitthu akina annittapuliha iretta ni akina ti ookhalana efayita wa atthu.



Mayeso

1. Ti ixeeni aximwaaxiitthu?
2. Ohimye iretta xexe sinittapulihwa ni aximwaaxiitthu.
3. Wooniherye mavarelo mayili ookhalana efayita, a axmwaaxiitthu.
4. Ohele V wa mihimeryo sa ekeekhayi ni F mihimeryo soowoo thiwa:
 - a) Aximwaaxiitthu ti itthu sirina ekumi ni sinooneya ni mayitho _____
 - b) Aximwaaxiitthu ootheene ti _____
 - c) Aviiru akina annirumeeliwa wa oruweriwa iyoolya _____
 - d) Ipateeriya sikina sinnirumeeliwa wa oruweriwa iyoolya _____
5. Oluttanihe muthinto wa mwaaxiitthu (A) ni eretta onitta pulihaaya (B)

	Ekoluna B (iretta)
Viiru	elapaha
Epateeriya	KOVID-19
Porotosowaariyu	Malaariya

Ekoluna A (aximwaaxiitthu)	Ekoluna B (iretta)
Viiru	elapaha
Epateeriya	KOVID-19
Porotosowaariyu	Malaariya

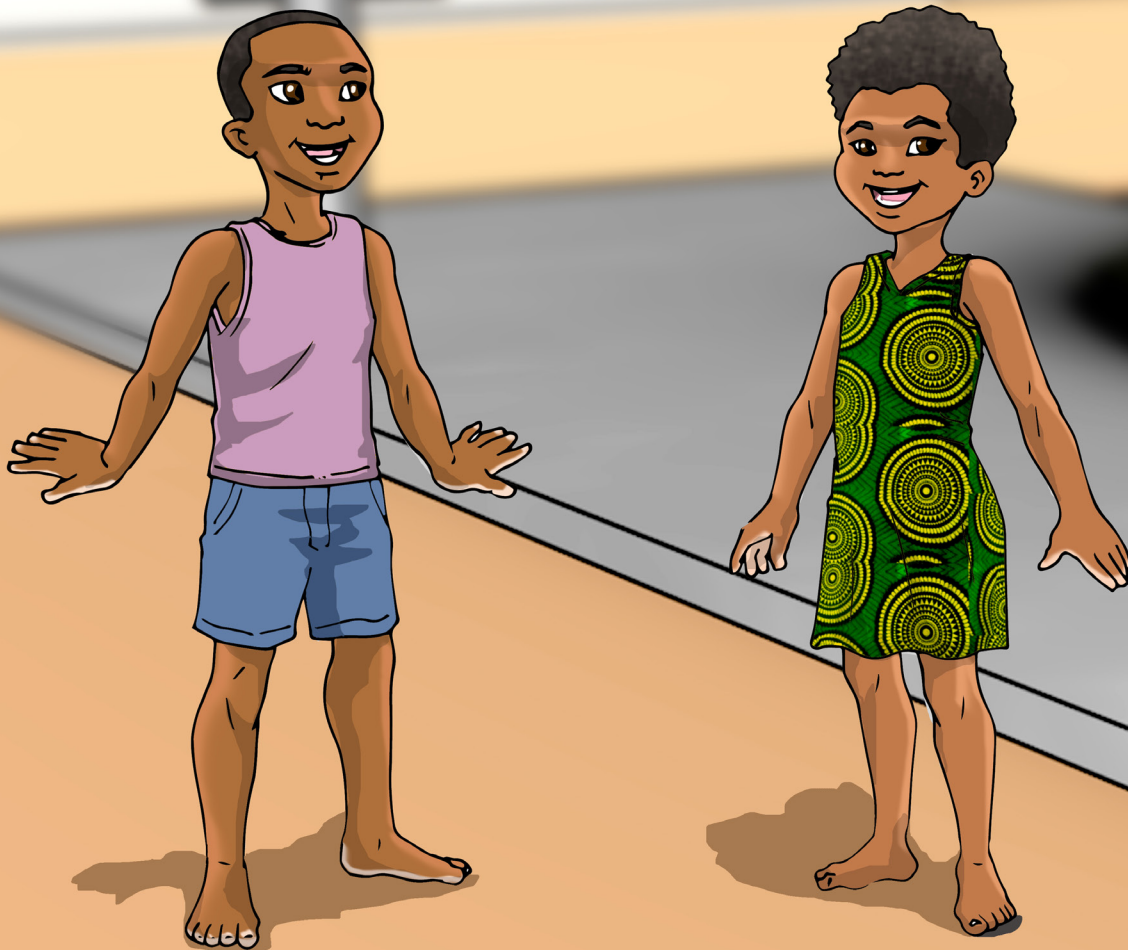
MPANTTA WA NISOMI

10

ERUTTHU YA MUTTHU

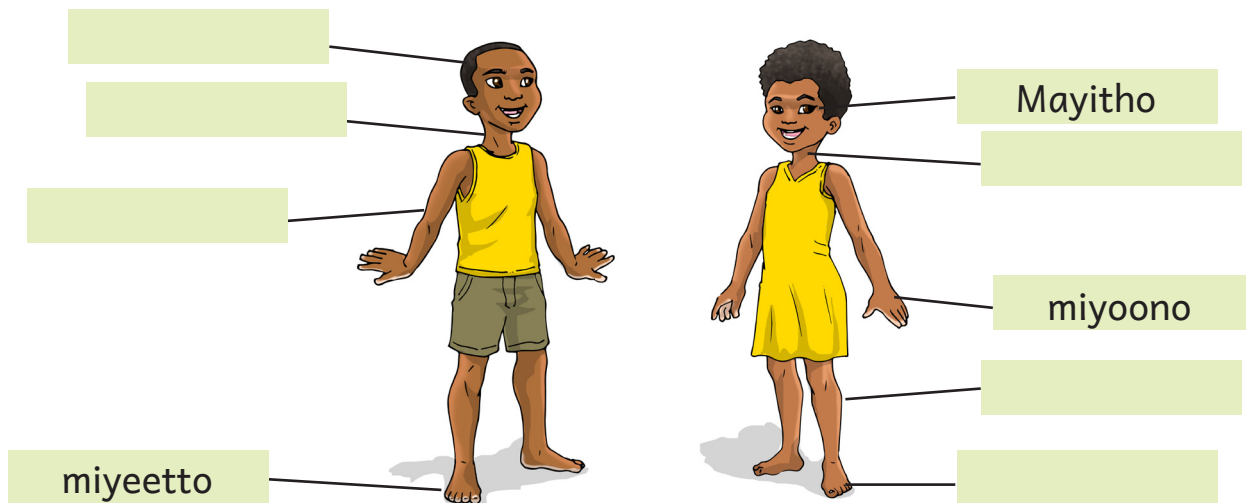
Mpantta ola, weyo onooxutta

- Osuwelela mipantta sa erutthu ya mutthu;
- Ohimya miteko sa mipantta sa erutthu ya mutthu;
- Ohimya vaniphwanyaneya aneerutthu aniira mpantta wa apareelyu oothotiha ni oomumuliha;
- Oleeliha muteko orinaaya apareelyu oothotiha ni oomumuliha;
- Ohimya iretta sa apareelyu oothotiha ni oomumuliha;
- Ottharihela mananna a orattela erutthu wa khula nihiku, mwiimusini ni mmuttettheni.



1. Mipantta sa erutthu ya mutthu

Olavulaka, opake muleeliheryo wa ncampulo.



Erutthu ya mutthu enikawanyeya mipantta miraru sikhanye: muru, erikittili ni miyoono ni metto.

Muru

Muru oniphwanyaneya mpantta wa osulu wa erutthu ni ti mpantta anikhala mayitho, eyano, ephula ni maaru. Muhina wa muru wookhala oremette onnivaherya wuupuwela.

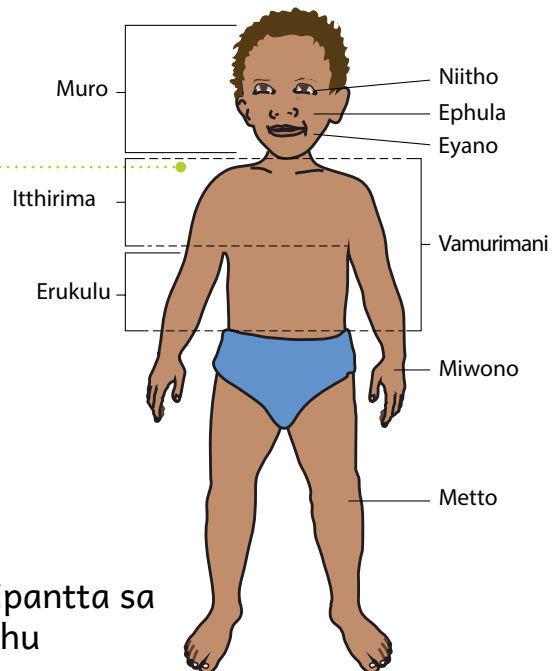
Erikittili

Mpantta wa erikittili ti enniphwanyaneya exiko, etthirima ni erukulu. Etthirima ni erukulu sinaasuka aneerutthu a muhina ootheene, ntoko murima, masasu, marupo.

Miyoono ni metto

Miyoono siniphwanyaneya mpantta wa osulu wa erikittili ni metto siniphwanyaneya mpantta wa vathi wa erikittili.

Miyoono sinnitthuniherya ovara ikaruma ni metto sinnitthuniherya weetta.



Ncampulo 2: Mipantta sa erutthu ya mutthu



Waakhule makoho!

1. Otakiherye olepa moolumo mukateerununi mwawo ni omalelihe mmalakani ni malove ala: erukulu, muru, mwetto, moonoo, etthirima, mayitho.

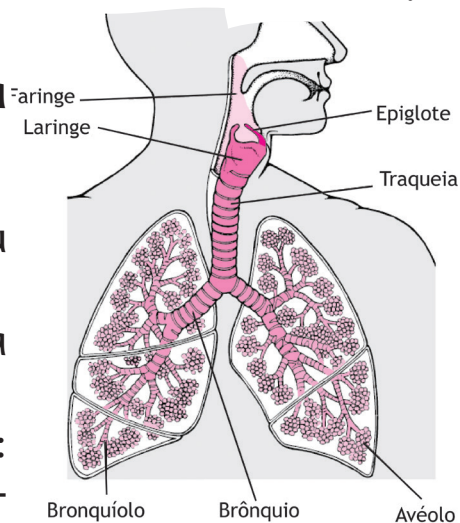
- a) _____ annitthuniherya woona amphwanyaneya mpantta wa _____.
- b) Mpantta wa erikittili enniphwanyaneya exiko, _____ ni _____.
- c) Ntata ninttopaanyeya ni _____.
- d) Inawu sinittopaanyeya ni _____.

2. Aapareelyu a erutthu ya mutthu

Erutthu ahu yookhalana aapareelyu anceene anivara miteko soovirikana.

Ethotelo: ti ethuluwelo ya eyoolya muhina mwa apreelyu oothotiha

Aapareelyu a erutthu ya mutthu ti: apreelyu oothotiha, apreelyu oomu-



muliha, apareelyu ooweettiha ephome, apareelyu oorusiha ni apareelyu ooyariha. Mpantta ola, hiyo ninrowa waaxutta apareelyu oothotiha ni apareelhyu oomumuliha.

Apareelyu oothotiha

Apareelyu oothotiha orina muteko wa othotiha iyoolya.

Ethotelo: ti ethuluwelo ya eyoolya muhina mwa apareelyu oothotiha

Mukhalelo wa apareelyu oothotiha

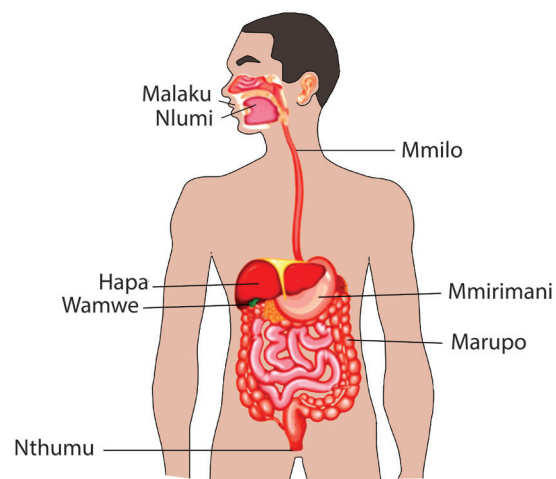
Apareelyu oothotiha ti ootthokiheya ni eyaano, efarinxi, esoofaku, napwiipwi, nrupo noofinuwa, nrupo nookhomaala, mukhwette ni nthumu.

Ethotelo ya iyoolya

Ethotelo enipacerya okathi eyoolya enikelaaya mwaano enataphweliwa ni mayino yoolowihwaka ni isene. Noomala ennirowa munipwiipwimi, enavira mmaruponi noofinuwa ni nookhomaala onoonaneyaaya onowela wa milyiho hata maasi.

Erutthu enniphwanya muyoolyani milyiho sootthuneya wiira eyo ekhaleke ekumi.

Eyoolya ehinnowela mmwiilini ennipakeya mavi yaawo anikhu-miheriwa ota aviraka vanthumuni.



Ncampulo 4: Mukawanyeyo wa erutthu ya mutthu



Waakhule makoho!

Waakhule mukateerununi mwawo

1. Ti ivi mipantta soothokiherya apareelyu oothotiha?
2. Ti exeeni eniiraneya wa iyoolya sihinnowela mmwiilini?

Mananna a omurattela apareelyu oothotiha

Wiira apareelyu oothotiha ovareke vooreerela, ohaana:

- Okuttha mayimno nnakhala imaara piili wa khula nihiku, voosiisu ni ohinatthi wumpaathi;
- Otaphwela oratteene iyoolya;
- Ohilya iyoolyowa sinceene;
- Ohilya iyoolya soovolaxa wala soovihaxa;
- Ohipaka isepwere sa wookolela erutthu noomalihawene olya;
- Owurya nnakhala eliituru emosa ni nuusu wa khula nihiku;
- Onyawa ni esapawu ohinatthi ni noomala olya.



Osuwele tho:

Okuttha mayino orumeelaka ekhitta ya otteeliha mayino orukurerihaka exikova mwaano, opaceryaka mayino a ottuli, voottharelana mayino a ohoolo, ni woomaliherya nlu mi okhuma ottuli orwaaka ohoolo, onnimusyakiha iretta ni onnilipiha mayino.

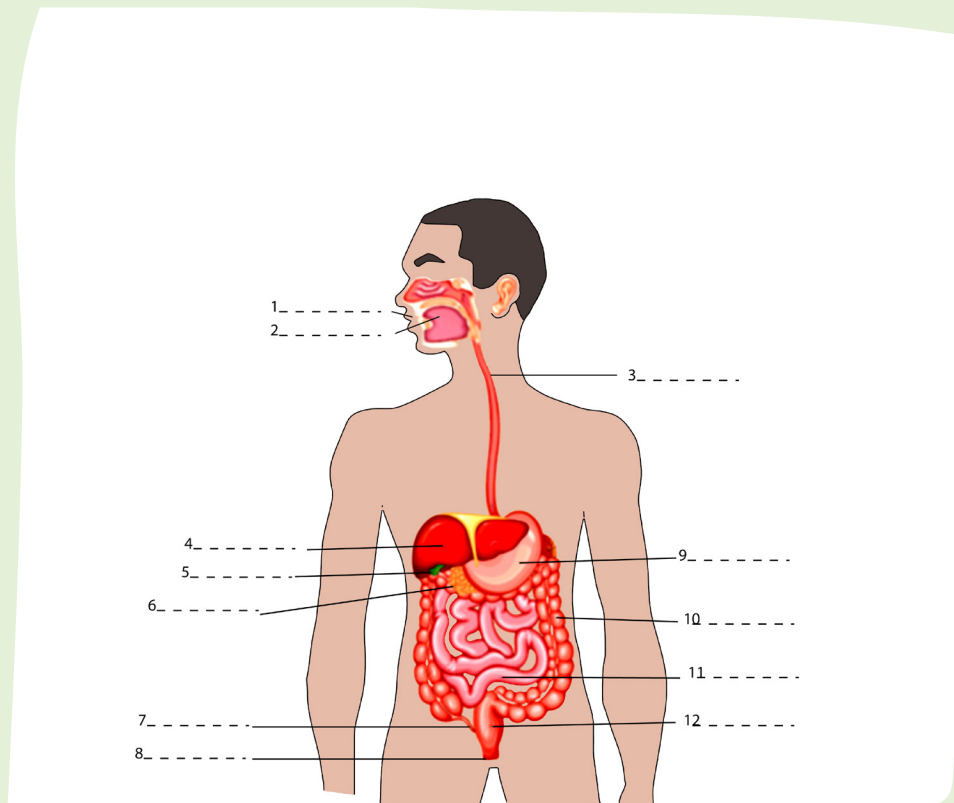
Nammwaano oretta wa mayino, wuntta ni onukha wa mayino, nlattu wa aximwaaxiitthu anikhala mmwaano wa mutthu ahinkhura musuwakhi.



Muuluulo ni Muwehawehero

Responde no teu caderno.

1. Enikawanyeya sayi erutthu ya mutthu?
2. Omalelihe nuulumo:
Sinniira mpantta wa muru,, ni
.....
3. Ti avi aapareelyu aniira mpantta wa erutthu ya mutthu?
4. Owehexexe ncampulo 2.



- a) Apareelyu xeeni onooniheriwa?
- b) Opake muleeliho wa ncampulo.
- c) Muteko xeeni orinaaya apareelyu owo?

Iretta sa apareelyu oothotiha

Apareelyu oothotiha onnikacamiheya ni iretta sinceene ntoko: ovaluwa, koolera, masooso a nipwiipwi, anaamunku a mmirimani.



Ncampulo 5: Iretta sa apareelyu oothotiha

Koolera – eyo eretta eniraveya, enttapuliwa mwaha wa iyoolya, matata oottakatta wala maasi oottapulihiwa. Muretta a koolera onnivaluwa vanceene ni onnirapheyasa.
Ovaluwa – ti onya mavi ookhala maasyeene imaara tthaaru wala ovikana, wa khula nihiku, owereyaka mmirimani.

Mananna a osyaka eretta ya koolera ni ya ovaluwasa

- Onyawa ni esphawu wala ettuura, noomala okhuma oxoworo;
- Owurya maasi ooreerela;
- Orapiha saana iyoolya;
- Orumeela kweekwe exoworo wala esinntiina;
- Othipela ikokhola.

Masooso a nipwiipwi – eyo eretta eniphwanyiha owereya vanceene nipwiipwi.

anaamunku a mmirimani - iyo vanceenexa amphwanyeya mwaha wa aximwaaxiitthu, miyoowa, sinooniherya owe-reya mmirimani, ohikhalana munkhela wa olya, woottaseya, ovaluwa wala onya mavi ni ephome.

Mananna a waasyaka anamunku a mmirimani

- Ohinya wala orusa vanlakani;
- Oreeriha makarikhwa ni onywa kweekwe;
- Okhuneela oratteene iyoolya.

**Waakhule makoho!**

1. Olepe mukateerununi mwawo iretta piili sa apareelyu oo thotiha.
2. Ohimye manannamararu a waasyaka anaamunku a mmirimani.

Apareelyu oomumuliha

Apareelyu oomumuliha ti onihoolela inamuna sa imumulelo sa pinaatamu.

Apareelyu oomumuliha orina muteko wa okuxa okisixeeniyu oniphwanyaneya mpheyoni orowihaka mpakha mmasasuni ni voowaakakhanya onnimukuxa tiyookisitu a karpoonu okhuma mmasasuni mpakha ota wa erutthu.

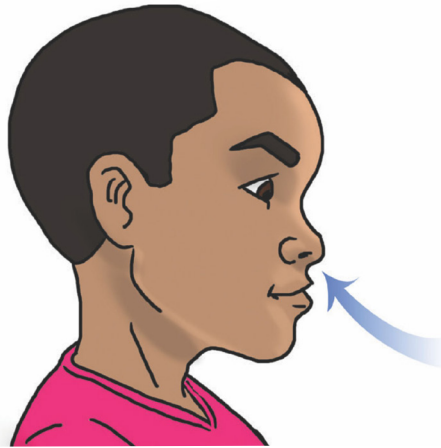
Mukhalelo

Apareelyu oomumuliha ti ootthokiheya ni ephula, efarinxi, elarinxi, nikholokwa, iporonkiyu ni masasu.

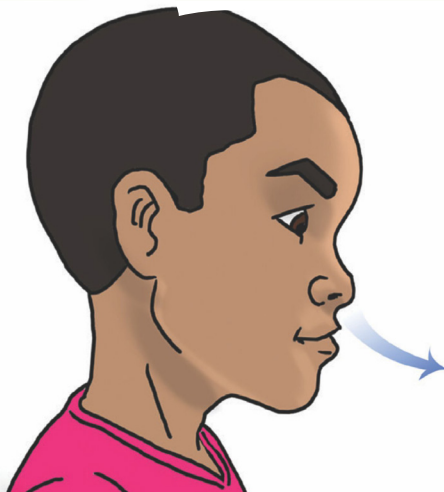
Ehihimeryo ni mphumuryo

Inspiração e expiração

Ehihimeryo ti mmiryelo wa epheyo yoosaereya okisixeeniyu eniphiya mpakha mmasasuni.



Mphumuryo ti mwiitthelo wa epheyo yoosareya tiyookisitu a karpoonu okhuma mmasasuni mpakha ota wa erutthu.





Waanisuwela wiira?

Manri a mphulani aakhalana mureerelo aya ori ovaraha ntthupi ni oreeriha epheyo.



Waakhule makoho!

1. Moota xeeni onitthokiheyaaya apareelyu oomumuliha?
2. Ti exeeni ehihimeryo?
3. Ti exeeni mphumuryo?

Mananna a orattela apareelyu oomumuliha

Wiira apareelyu oomumuliha ovareke saana, weyo ohaana:

- Omirya iphumu ni mphulani ohiya eyano wiira ekele paahi epheyo yookikitthiwa mphulani;
- Kweekwe otathatatha ntthupi mpaani;
- Osyaka mapuro oowuutuwaneryeya ni mwiixi;
- Ohiyerera mpaani ophiya mveevela;
- Opaka isepwere sa wookolela erutthu.

Iretta sa apareelyu oomumuliha

Imaara sinceene apareelyu oomumuliha onnittapula iretta soovirikana ntoko: eporonkiiti, mafuwa, naakothokotho, mme-la, elapaha ni iretta sikina.



Ncampulo 9: Munamwane okothomolaka

Eporonkiiti – ti mukacamiho wa omumula onittapulihiwa ni aximwaaxiitthu aniiriwa viiru wala epateeriya.

Mafuwa – ti mukacamiho wa omumula mwaha wa wiipakaseya mphito wa iphumu.

Elapaha - eyo eretta yooraveya enittapulihiwa ni ipateeriya.

Wiira osyake elapaha:

- Ohaana osyaka okhala mapuro oowaliwa oowaatta atthu;
- Ohaana ohula ixanela wakhala mukarerani;
- Ohaakakhanyeke itthu ni atthu aranve elapaha.

Naakothokotho ti eretta eniraveya enittapulihiwa ni mwaaxiitthu oniiriwa viiru.

Naakothokotho onnoonaneyaxa okathi wooriirya ni onniravihaniwa mwaha wa olavulihana, okothomola wala waaxamurya.

Wiira omusyake naakothokotho:

- Ohaana osyaka okhala mapuro oowaliwa oowaatta atthu;
- Onyawa oratteene ni esphawu wala ettuura;
- Owurya sa maasyeene ntoko isuumu, exa, olya mihoko rokho sinceene;



Wuupuwele:

Erutthu ya mutthu enikawanyeya wa muru, erikittili ni miyoonmo ni metto.

Epareelyu oothotiha ti ootthokiheya ni eyano, efarinxi, esoo-faku, nipwiipwi, nrupo noofinuwa, nrupo nookhomaala.

Apareelyu oothotiha onnivaherya erutthu milyiho sookhuma muyoolyani.

Apareelyu oomumulia onnitthokiheya ni ephula , efarixi, elariixi, nikhlokwa, iporonkiyu ni masasu.

Apareelyu oomumuliha onnivaherya erutthu okisixeeniyu ni onimukhumihati tiyookisitu a karpoonu ovenya mmasasuni onurorihaka ota wa erutthu.

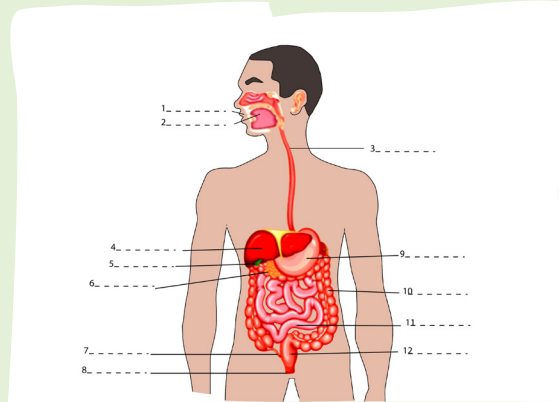
Wiira apareelyu oothotiha okhaleke mukumi, ti vooreerela otaphwela oratteene iyoolya ni ohilya iyoolya sootepaxa oriirya wala sootepaxa oviha ni owurya maasi.

Wiira apareelyu oomumuliha okhaleke mukumi, nihaana omumulela mphulani wiira manri areeriheke epheyo enkela mwiirutthuni.



Mayeso:

1. Owehexexe ncampulo.



- a) Opake muleeliho wa ncampulo.
- b) Exeeni eniiraneya ni eyoolya mwano?
- c) Mpantta xeeni wa apareelyu oothotiha eniira neyaaya ethotelo ya milyiho?

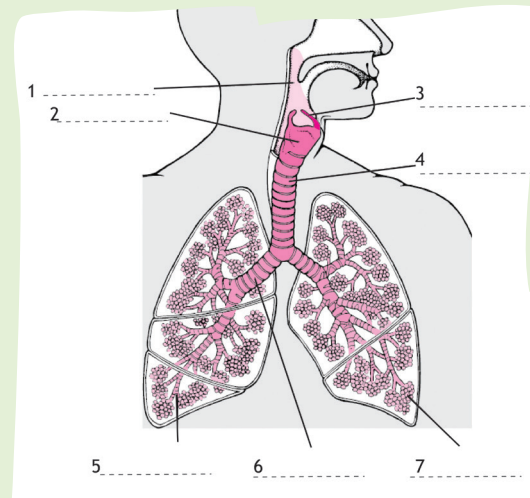
2. Ohimye iretta tthaaru (3) sa apareelyu oothotiha.

3. Owehexexe oratteene ncampulo wa apareelyu oomumuliha.

- a) Opake muleeliho aya.
- b) Ti woowi oniiraneya mwaakakhanyo wa epheyo?
- c) Mwaha wa exeeni nikhanlaahu oomumula ni mphulani ohiya ni mwaano?

4. Ohimye mananna mararu (3) a osyaka eretta ya elapaha.

5. Oluttanihe mithinto sa imu mulelo ni makhalelo aya.



Muthinto wa mmumulelo	Makhalelo
1. Ehihimeryo	A. Ekhumelo ya tiyookisitu a karpoonu mmasasuni
2. Mphumuryo	B. Ekelelo ya okisixeeniyu mmasasuni

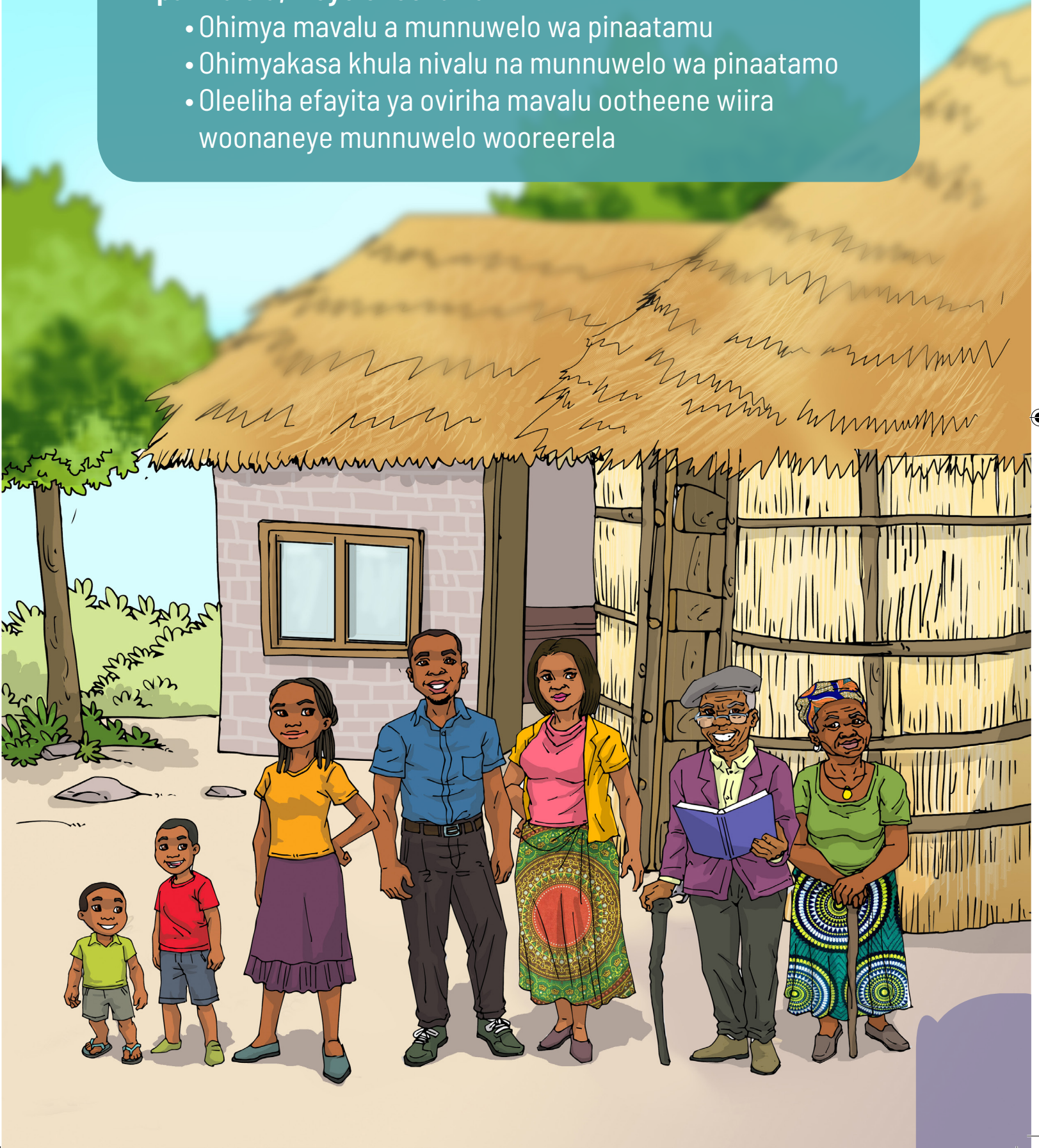
MPANTTA WA NISOMI

11

MWIISOONELELO

Mpantta ola, weyo onooxutta:

- Ohimya mavalu a munnuwelo wa pinaatamu
- Ohimyakasa khula nivalu na munnuwelo wa pinaatamo
- Oleeliha efayita ya oviriha mavalu ootheene wiira woonaneye munnuwelo wooreerela



Mavalu a munnuwelo wa pinaatamu

Erutthu ahu ennithatuwa okhuma okathi niniyariwaahu ni enavira ethatuwaka okathi wootheene wa okhala wahu.

Mavalu a munnuwelo wa pinaatamu annikawanyeya wa okathi miraru: onamwane, omuttompe ni omutokweene.

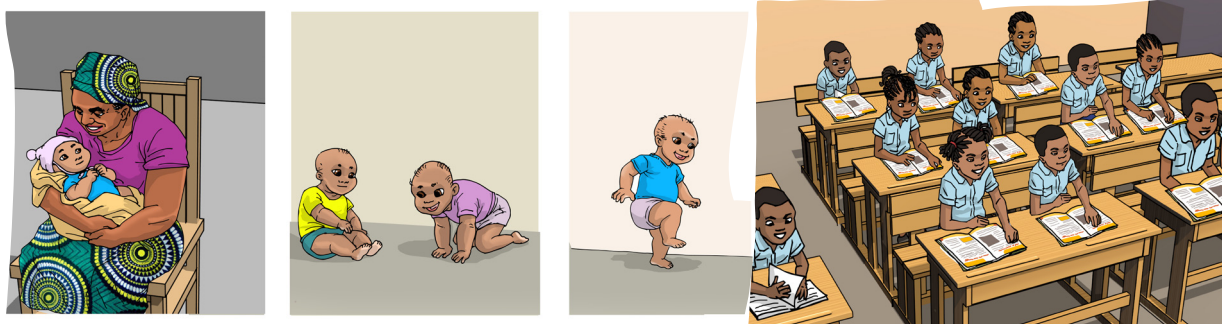
1.1 Onamwane:

Ti okathi onipacerya okhuma wooyariwani mpakha wiira iyaakha muloko ni emosa. Ti okathi wa oxutta vanceene ni wii-xoonelela.

Ti okathi yoola onipacerihiwa olavula ni weetta, orowa oxikola, oxutta meettelo a wiiraana, waattittimiha atthu ni sikina.

Onamwane onnikawanyeya wa okathi miili: okathi wa ttuutthu ni okathi wa mwanamwane.

Okathi ola attuutthu ni anamwane anaaroromela axipaapa aya wala atthu akina anamalela, wa olya, orapa, owara, orupa ni itthu sikina.



Ncampulo 1: Okathi wa munnuwelo wa munamwane

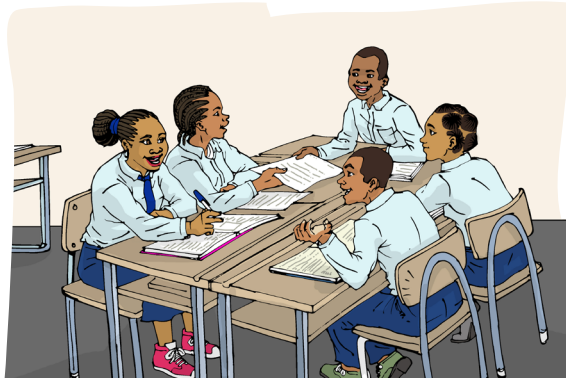
Namalela: mutthu onimulela mukina

1.2 Omuttompe:

Ti okathi onipacerya ni iyaakha muloko ni piili mpakha iyaakha miloko miili. Ola okathi wa eriyari okhuma onamwane orowaka otuphela omutokweene. Okathi ola onnoonaneya othatuwa van-ceene wa erutthu ni meettelo a axaathiyana ni axaalopwana:

- Wa axaathiyana, mapele annunnuwa, eyuunu ennitepa waanuwa, annipaceriha okwattuwa, ni itthu sikina.
- Wa axaalopwana, nsu ninnipacerya okhomaala, annirweela ireru ni ipwetupwetu, makhata annitepa waanuwa, ni itthu sikina.

Wa okathi ola, siiso axaalopwana ntoko axaathiyana erutthu ennunnuwa, annirweela manri mukaphwani ni veenena, aanunkha muhiriri mukaphwani hata erutthu yootheene.



Ncampulo 3: Aximiravo yoopaka mwaha

1.3 Omutokweene:

Ti okathi onipacerya iyakha miloko miili orowaka ohoolo. Owo onnikanwanyeya wa okathi miili: wa omuulupale ni wa wuuluvala.

Okathi wa omuulupale:

Wa okathi ola, erutthu ennihiya wunnuwa, voowaattela mutthu onniphwana muteko ni musurukhu mmansaweene. Voowaattelaxa ti okathi ola anikhalanaaya anamwane.

Mukaphwani - mpuwa wa mpantta onikumana moonono ni erutthu (ekaphwa)



Ncampulo 6: Mavalu a munnuwelo a pinaatamu

Okathi wa omuulupale:

Wa okathi ola, erutthu ennihiya wunnuwa, voowaattela mutthu onniphwana muteko ni musurukhu mmansaweene. Voowaattelaxa ti okathi ola anikhalanaaya anamwane.



Ncampulo 5: Mulopwana owuluvala oopaka mwaha ni amiravo

Okatthi wa wuluvala wala wa anakhulu: ti okathi onipacerya okhuma iyaakha 65 orowaka ohoolo.

Wa okathi ola, atthu annikhalana ikharari soottelela, nrapala ninnitepa orweela mannyaari ni imaara sinceene annikhalana makacamihlo a ekumi, ntoko ohiwerya wona, wiiwa, olavula, ohilipa mitika ni mmakhuvani. Atthu annisuwelela vanceene ikettelo sa okhala.

Efayita ya oviriha mavalu ootheene wiira woonaneyo munnuwelo wooreerela

Pinaatamu onniviriha mavalu a munnuwelo oovirikana.

Wa khula okathi (onamwane, omuttompe ni omutokweene) sinnikhumelela mithatuxo sinceene muhina wa erutthu, wa meettelo, wa sootthuna ni wa soottotteleya muraarelo. Siiso, ti

vooreerela osuwela etthu xeeni eniiraneya wa khula nivalu na munnuwelo wiira vaweryaneyeye okasoopela saana ekumi.

Okathi wa omuttompe amwaavano anniiwehererya mwaha wa mithatuwo ni munnuwelo wa erutthu aya, ti vo, nvaanelo ni axipaapa, mapurusoori, amusi ti wooreerela.

Anakhulu ni atthu oorakala vannireerela okhaliheriwa ni ottittimihiwa. Axuulupale ni anakhulu annisuwelela vanceene iket-tela sa okhala akhanlaaya oowaaleeliha amwaavano.

Ahaana ottittimihiwa ni wooneliwa ofayi voolikana athiyana ni alopwana ni tho atthu oorakala .



Ncampulo 6: Mavalu a munnuwelo a pinaatamu



Wuupuwele

Mavalu a munnuwelo a pinaatamu ti: onamwane, omuttompe ni omutokweene.

Okathi wa onamwane, attuutthu ni anamwane anaaroromela axipaapa aya wala anamalela.

Okathi wa onamwane onipacerya okhuma wooyariwani mpakha iyaakha muloko ni emosa.

Omuttompe ti okathi wa eriyari okhuma onamwane orowaka otuphela omutokweene.

Okathi wa omuttompe onipacerya ni iyaakha muloko ni piili mpakha iyaakha miloko miili.

Okathi wa omutokweene onipacerya iyakha miloko miili orowaka oholo. Owo onnikanwanyeya wa okathi miili: wa omuulupale ni wa wuuluvala.

Anakhulu ahaana okhaliheriwa ni oxikhiwa ni nttittimiho hata mphento.



Mayeso

Waakhule mukateerununi mwawo

1. Ti avi mavalu a munnuwelo a pinaatamu?
2. Nivalu xeeni na munnuwelo na apinaatamu oniphwanya neyaawo?
3. Ohimye makhalelo mayili a nivalu na munnuwelo oniphwanyaneyaawo.
4. Oluttanihe ni muupa (→) khula nivalu na munnuwelo ni makhalelo aya

Nivalu na munnuwelo	Makhalelo
1. Onamwane	A. Okathi onoonaneyaaya othatuwa wa erutthu ni meettelo
2. Omuttompe	B. Okathi onipaceriwaaya olavula, weetta, orowa oxikola
3. Omutokweene	C. Okathi erutthu enihyaaya wunnuwa

MPANTTA WA NISOMI 12

EMATEERIYA NI MIKHALELO SAYA

Mpantta ola, weyo onooxutta:

- Osuwelela emateeriya;
- Ohimya mikhalelo sa itthu;
- Osuwelela mikhalelo soowooneya sa emateeriya;
- Othothokola mikhalelo soowooneya sa emateeriya;
- Ohiyaniha mikhalelo sa emateeriya wa mikhalelo sa ikompooxitu.

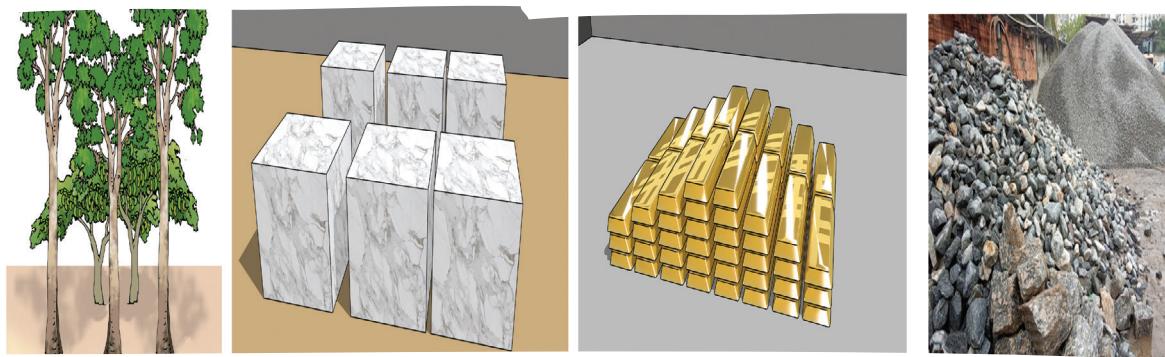


Emateeriya

Yootheene yeele ennirukurerya, ntoko ikhatera sa musaala onisomaawo, maasi oniwuryaawo mahiku ootheene, miri, impa, enipakeya ni emateeriya.

Masi emateeriya kahiyeno paahi etthu okhanlaawo woovara, nave tho epheyo onimumulaawo ti emateeriya.

Nto, **emateeriya** ti yootheene yeele erina ekhitta ni enikhala vanipuroni.

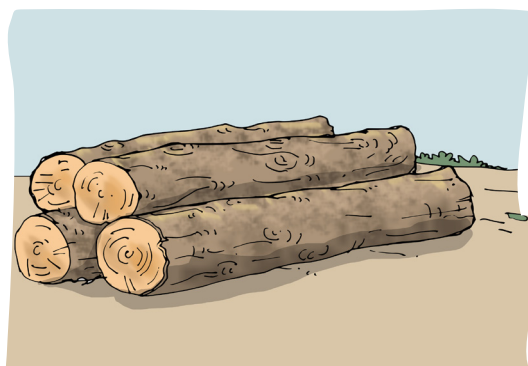


Ncampulo 1: Mwiri, epooloku yo simenti, epooloku ya ewero, nlu ku

Erutthu

Erutthu ti epantte ekhaani ya emateeriya. ntoko mwiri ti emateeriya. Nathikila mwiri niniphwanya irintta, erikittili sinii-tthaniwa irutthu.

Porção: é parte ou pedaço de alguma coisa.

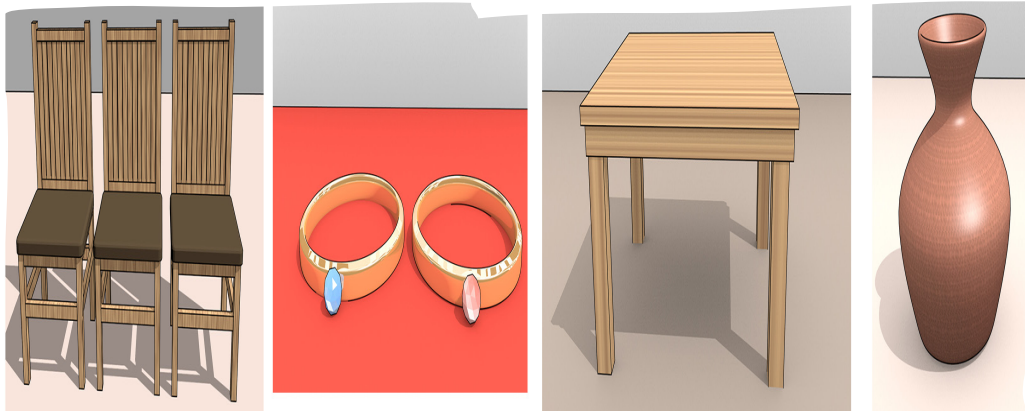


Ncampulo 2: Erutthu, erikittili sa mwiri

Etthu

Erutthu yaakhalihiwaka ekaruma wala eferamento ya muteko, ni mutthu, eyo eniitthaniwa **etthu**.

Ekaruma: ti etthu, ti eferamenta, ti erumeelo



Ncampulo 3: Moniheryo a ekaruma: ekateera, mwapu, munela wa ottelana



Waakhule makoho!

Waakhule mukateerununi mwawo

1. Ti exeeni emateeriya?
2. Ohimye miyooniheryo miraru sa emateeriya.
3. Omalelihe mmalakani ni malove: emateeriya ni etthu

a) erikittili -----	f) ekateerunu -----
b) meesa -----	c) mwiri -----
h) nluku -----	n) epheyo -----
4. Oluttanihe vooreerela ekoluna ya moonoo woolopwana ni ya moonoo woothiyana.

Makhalelo a emateeriya

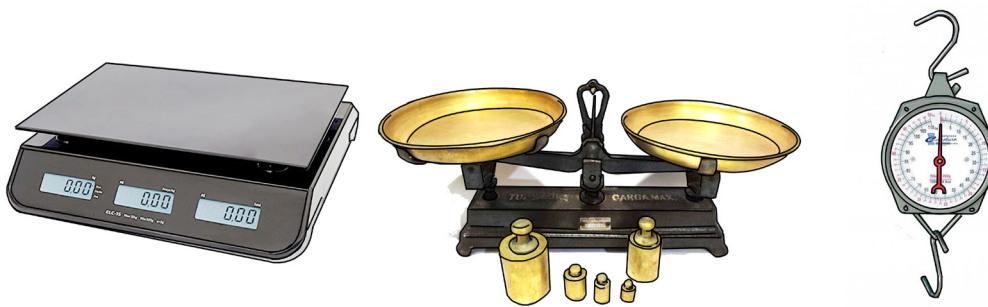
Mikhalelo a emateeriya ti iye sinikhaliherya osuwelela emateeriya ela.

Va ninrowa ohimya mikhalelo miili pahi sa emateeriya: ekhitta ni evolume.

Ekhitta - ti mwaattelo wa emateeriya. Irutthu sootheene sookhalana ekhitta.

Ekhitta vanceenexa emphimmwa ni ikilokaraama.

Epalansa ti ekaruma enirumeeliwa wa ophima ekhitta.



Ncampulo 4: Epalansa yoopotoliwa, ya iparatho ni yoolupanelo

Evolume - ti opuro wookhaliwa ni emateeriya.

Ehisapo yoorumeelaxiwa wa ophimmwa evolume ti eliituru, ntoko naaphavelaka othuma makhura, maasi, mukaka, nimphi- ma ni eliituru.

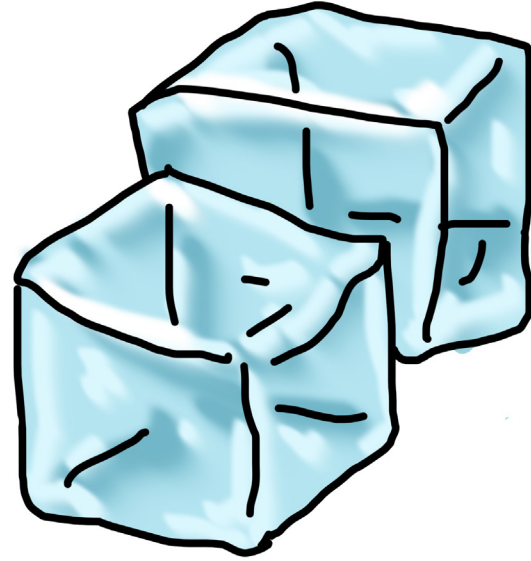
Ikhalelo soowooneya sa itthu:

Emateeriwa enniphwanyaneya wa ikhalelo tthaaru: ekhalelo yoowuuma, ekhalelo ya maasyeene ni ekhalelo ya epheyo.

ntoko: Maasi anniphwanyaneya wa ihalelo tthaaru.

Ekhalelo yoowuuma

Wa ekhalelo yoowuuma emateeriya ennooniherya mukhalelo ni evolume yoosuwanyeya, walaa-ni, wa khula nipuro onihelaawo emateeriya, eyo enrowa okhala evolume emosaru ni enirowa okhala mukhalelo mmosaru.



Ncampulo 5: Maasi ni ekhalelo yoowuuma



Ncampulo 7: Maasi ni ekhalelo yomaasyene

Ekhalelo ya maasyeene

Wa ekhalelo ya maasyeene emateeriya enitthikela okhalana evolume emosaru masi enirowa okhalana mukhalelo nipuro niheliwaaya.

ntoko wahela etthu ya maasyeene mukoophoni moorukurereya, eyo enoorukurereya, wahela mukoophoni mookhala kwataraatu eyo nave enookhala kwataraatu.

Ekhalelo ya epheyo

Wa ekhalelo ya epheyo emateeriya khirina evolume nnakhala mukhalelo woosuwanyeya.



Ncampulo 8: Maasi ni ekhalelo ya epheyo

Mipittikuwelo sa ikhalelo sa emateeriya:

Ekhalelo ya emateeriya ennipittikuwa wa ekhalelo ekina yuncereriwa wala ovukuliwa oviha. Mipittikuwelo sinoonaneya ti: epwexereryo, eyuumelelo, ewelelelo ni erttheelelo.

yoowuuma → maasyeene
(epwexereryo)

maasyeene → yoowuuma
(eyuumelelo)

maasyeene → ya epheyo
(ewelelelo)

ya epheyo → maasyeene
(erttheelelo)



Yoowuuma



Maasyeene



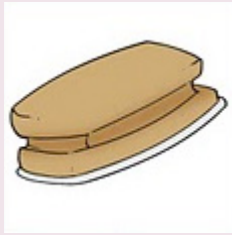
Ya epheyo

- **Epwexereryo** – ti mupittikuwelo wa ekhalelo yoowuuma okhalaka wa ekhalelo ya maasyeene. Onoonaneya ni wunce reriwa oviha.
- **Ewelelelo** – ti mupittikuwelo wa ekhalelo ya maasyeene okhalaka wa ekhalelo ya epheyo. Onoonaneya ni wuncereriwa oviha.
- **Eyuumelelo** – ti mupittikuwelo wa ekhalelo ya maasyeene okhalaka wa ekhalelo yoowuuma. Onoonaneya ni ovukuliwa oviha.
- **Erttheelelo** – ti mupittikuwelo wa ekhalelo ya epheyo okhalaka wa ekhalelo ya maasyeene. Onoonaneya ni ovukuliwa oviha.



Waakhule makoho

1. Omalelihe mmalakani mwa moolumo ari vathi wa khula ncampulo:



Ettipitthelo enooniherya emateeriya erina ekhalelo _____



Maasi anikhuma mukhantirinyani ni anatanxereya ni epheyo ti emateeriya erina ekhalelo _____



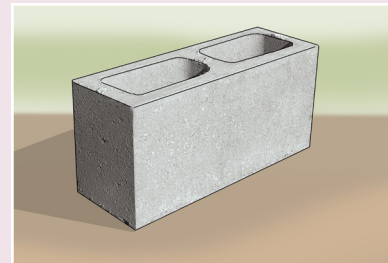
Aalikoro ti emateeriya erina ekhalelo _____



Epheyo enimumulaahu ti emateeriya erina ekhalelo _____



Maasi anikhuma nturunreera ti emateeriya erina ekhalelo _____



Esumpurero rnoo-niherya emateeriya erina ekhalelo _____

2. Omalelihe moolumo anittharelana orumeelaka malove: epwexereryo, ewelelelo, eyuumelelo, erettheelelo.

- Opittikuxiwa ekhalelo yoowuuma wa ekhalelo ya maasyeene oniiriwa -----
- Opittikuxiwa ekhalelo ya maasyeene wa ekhalelo yoowuuma oniiriwa -----
- Opittikuxiwa ekhalelo ya epheyo wa ekhalelo ya maasyeene oniiriwa -----
- Opittikuxiwa ekhalelo ya maasyeene wa ekhalelo ya epheyo oniiriwa -----

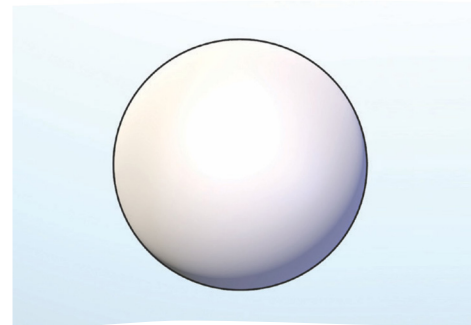
Mukhalelo wa emateeriya

Emateeriya ti ootthokiheya ni ipantte sootepaxa oyeva siniit-thaniwa **aatomu**.

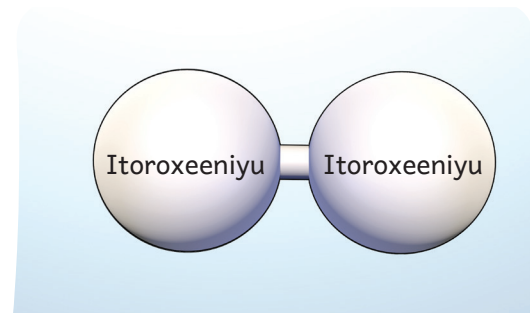
Aatomu ti ipantte sootepaxa oyeva sihiniweryaneya okawanyiwa.

Iyaatomu sookhala woothukumaneya wa makhalelo manceene sikhumelelaka **imoleekula**.

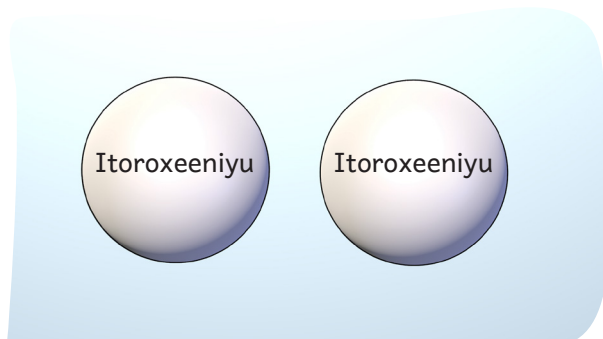
Emoleekula ti nikhuru na iyaatomu sootopaanyerana ni sinnikhala soolikana wala soovirikana. ntoko: emoleekula ya itoroxeeniyu erina iyaatomu piili soolikana ni emoleekula ya maasi erina iyaatomu piili soovirikana



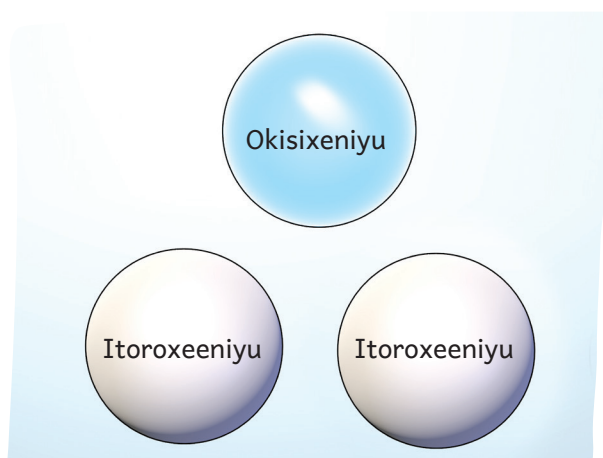
Ncampulo 9: Atoomu



Ncampulo 10: Hitoroxeeniyu



Elementu ti nikhuru na iyaatomu soolikana.



Ekompooxitu ti yoo-pakanyeya ni meelementu oovirikana ootopaanyerana, ntoko okisixeeniyu ni itoroxeeniyu annikumiherya maasi.

Supistansiya ti efayita ya emateeriya eniira mpantta wa irutthu
Mitakaanelo

Mutakaanelo ti ethukumanyero ya isupstansiya piili wala ovikana.

ntoko mutakaanelo wa musoro ni ekhutte, makhura ni maasi, esuukhiri ni maasi, muhusi wa mattuvi, esalata.



Mitakaanelo sinnikhala

Mitakaanelo omoxeeneyo wala **soolikaniheya** ti iye siniira nathukumanya isupstansiya piili wala ovikana khasinsuweleya isupstansiya xeeni sithukumanyiwe.

ntoko: Mutakaanelo wa maakha ni maasi; mutakaanelo wa esuukhiri ni maasi; mutakaanelo wa exa ni mukaka.



Mitakaanelo eteroxeeneyo wala soovirikaniheya ti iye sinii-ra nathukumanya isupstansiya piili wala ovikana sinnisuweleya isupstansiya sithukumanyiwe.

ntoko: Mutakaanelo wa maasi ni makhura anaapeeliwa; mutakaanelo wa maasi ni ihaava; esalata.



Figura 15:



Wuupuwele

Emateeriya ti yootheene yeele erina ekhitta ni enikhala vanipuroni.

Erutthu ti epantte ekhaani ya emateeriya.

Etthu ti erutthu yoopakiwa ni mutthu wiira ovareleke muteko.

Mikhalelo sa emateeriya iye sinikhaliherya osuwelela emateeriya eneene.

Emateeriya enniphwanyaneywa wa ikhalelo tthaaru: ekhalelo yoowuuma, ya maasyeene ni ya epheyo.

Mipittikuwelo a ikhalelo ya emateeriya ti: epwxereryo, eyuumelelo, ewelelelo ni erettheelelo.

Emateeriya ti ootthokiheya ni ipantte sootepaxa oyeva siniitthaniwa aatomu ni **iyaatomu** sookhala woothukumaneywa wa sikhumelelaka **imoleekula** Mutakaanelo ti nthukumanyo wa isupusitansiya piili wala ovikana. Mitakaanelo sinnikhala omoxeeneyo; iye soolikaniheya ni sinnikhala eteroxeeneyo, iye soovirikaniheya.



Mayeso

Waakhule mukateerununi mwawo

1. Oluttanihe khula elementu ni ekhalelo awe:

Ekoluna I	Ekoluna II
Epaara ya ewooru	Emateeriya
Ethaapwa	
Anela a ewooru	
Nluku	Etthu
Ekamutthu ya Mondlane	
Ekhatera ya ithaapwa	

2. Wa ikhalelo soowooneya sa emateeriya, oluttanihe ni miyuupa ekoluna A ni ekoluna B.

Ekoluna A	Ekoluna B
A. Ekhalelo ya maasyeene	1. Ihaava
	2. Esuumu ya iraranca
B. Ekhalelo yoowuuma	3. Etthapwe ya maasi ooviha
	4. Epheyo
C. Ekhalelo ya epheyo	5. Nluku
	6. Maasi

2. Oluttanihe ekoluna I ni ekoluna II:

Coluna I	Coluna II
1. Ekhitta	() Mukawanyeyo wa emateeriya wa ipantte sikhaani
2. Evolume	() Mwaattelo wa emateeriya erutthu enikhalanaaya
	() opuro okhaliwe ni erutthu

3. Oluttanihe mipittikuxeyo sa ikhalelo ni muhimero aya.

- Ewelelelo () opittikuxa ekhalelo yoowuuma wa ekhalelo ya maasyeene
- Erettheelelo () opittikuxa ekhalelo ya epheyo wa ekhalelo ya maasyeene
- Eyuumelelo () opittikuxa ekhalelo ya maasyeene wa ekhalelo yoowuuma
- Epwexerery () opittikuxa ekhalelo ya maasyeene wa ekhalelo ya epheyo