

# **SCIENCE IN LOWER PRIMARY CLASSES**

**A RESOURCE BOOK FOR LEARNING SCIENCE ( LUMASAABA LANGUAGE )**

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## FOREWORD

The teaching and learning of science in lower primary schools can improve if pupils local learning environment is greatly used. Science concepts in local languages can be integrated in thematic curriculum strands if teachers are exposed to them. This resource book is an attempt to supplement teacher's local knowledge about science concepts that improve the learning of science in lower primary schools.

Much of our environments consist of plants and animals which pupils must learn about. These together with their parts have equivalent science terminologies in local languages that would make it easier for teachers to transfer science concepts to learners. This builds confidence as learners advance in their education and enables them to creatively construct innovations based on their understanding. This resource book can also help teachers and learners to appreciate the importance of the relatives exhibited in the social hierarchies of our extended family. All these when learned about can establish an interesting baseline of local language terminologies relevant to the learning of science in the environments around their homes and schools.

This resource book is a result of a research that documented local terminologies relevant to the teaching and learning of science concepts in lower primary schools in Eastern Uganda. The resource book can provoke interactions amongst learners and teachers to constructively build knowledge for themselves, but can also guide excursions and discussions when learning activities take place outside classrooms.

Learners who are passionate about science can also use this book.



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## **ACKNOWLEDGEMENT**

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## **A SHORT TEACHERS GUIDE**

This resource book is to assist teachers as a starting guide in preparing thematic curriculum lessons in lumasaaba speaking areas. Other familiar terms that are commonly used in the area can be adopted. Teachers are encouraged to develop collections of local terms that could be built on with time.

## 1. BIHAMBI KHUMUNDU.

Basomi bali ni khukhwiyika bisintsa bye kumubili ni kimikaso kyabwo. kihwakha kakho kufuna lukhalala lwe bisintsa bye kumubili mu lumusaaba.

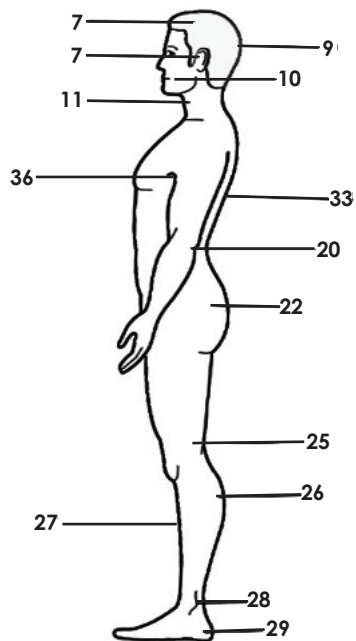
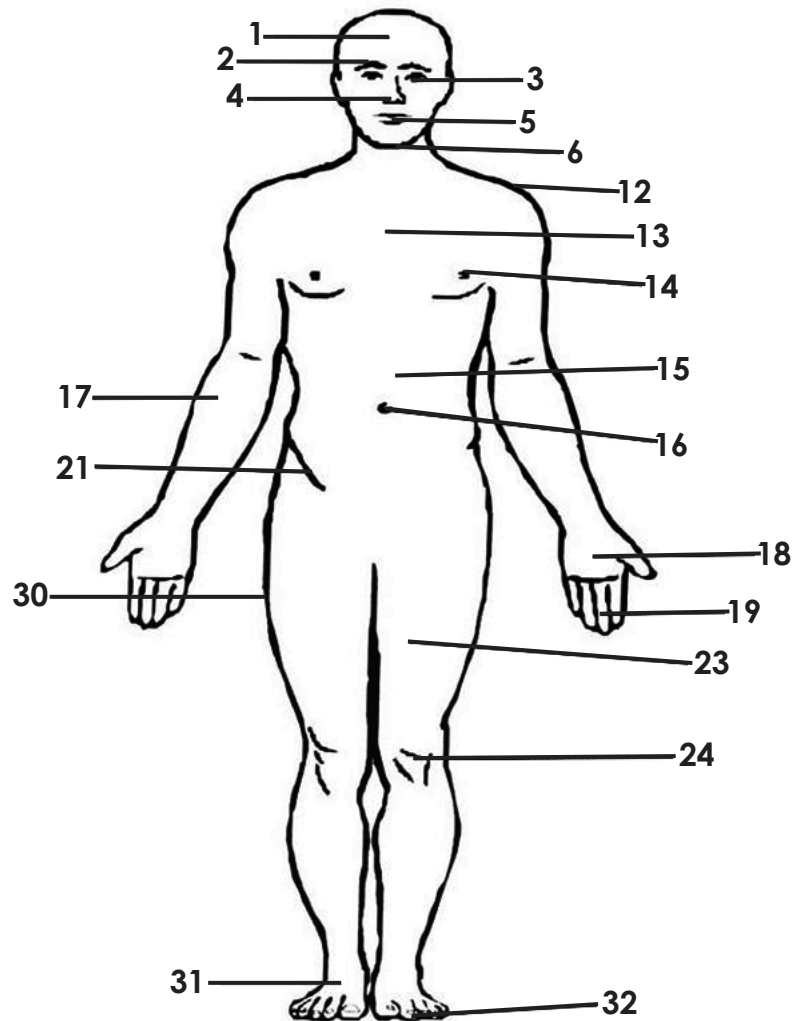
- a) Bisintsa bye kumubili
- b) Kumukhoosi kwe bilyo mwibili
- c) Imbela yo mundu mwibili
- d) Bikuuka bye kamento
- e) Kamakhono ni tsintsala

## 1. ABOUT THE HUMAN BEING.

Learners need to know about human body parts and their uses. An attempt has been made to provide a list of parts in local language for

- a) Parts of the body
- b) Alimentary canal
- c) Respiratory system
- d) Types of teeth
- e) Hands and fingers

# BISINTSA BYE KUMUBILI (PARTS OF THE BODY)



34



35

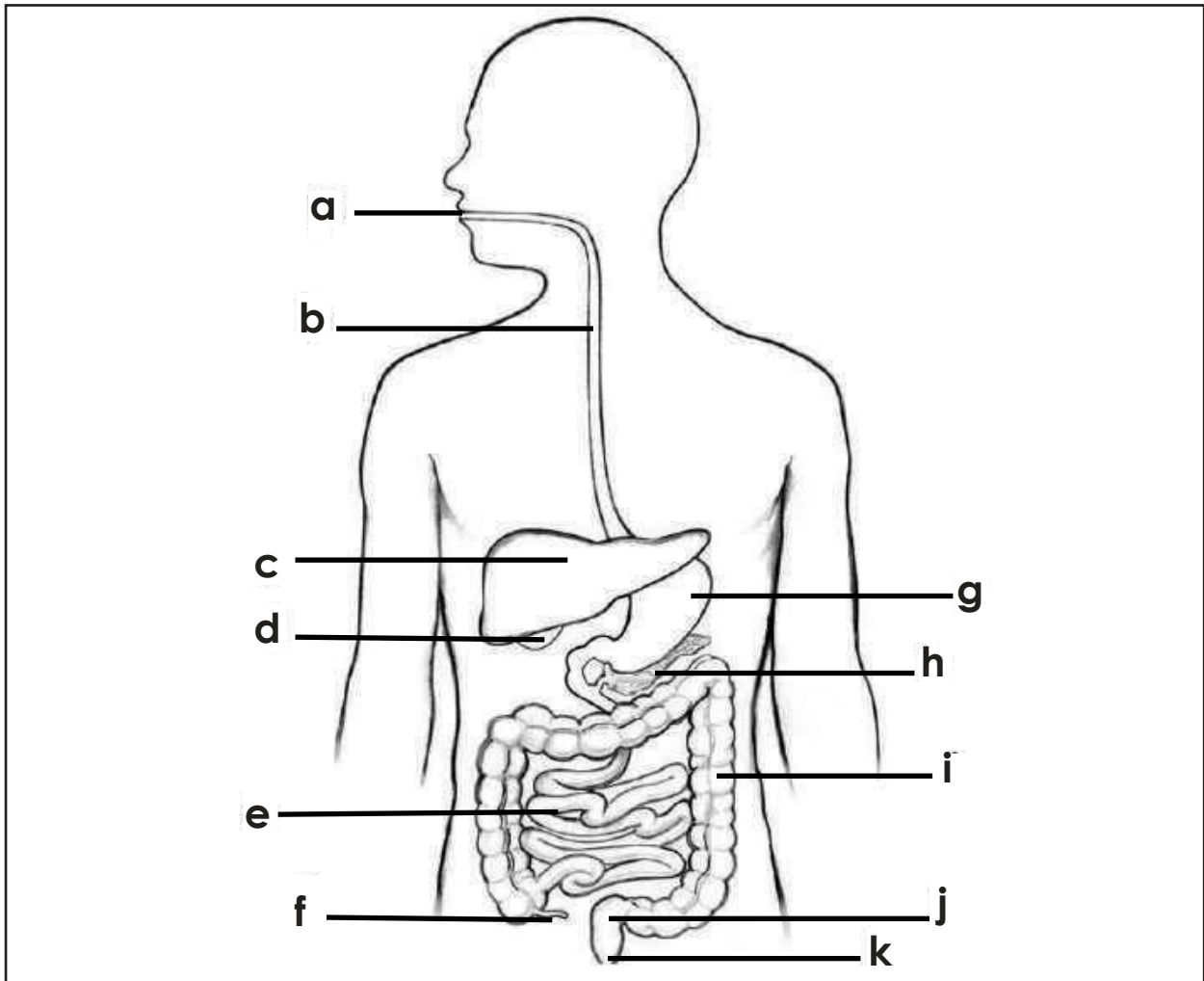


## LUMASAABA

## ENGLISH

1. Bubweni	1. Fore Head
2. Sisike	2. Eye brow
3. Imoni	3. Eye
4. Lilyoolu	4. Nose
5. Kumunwa	5. Mouth
6. Silefu	6. Chin
7. Litsune	7. Hair
8. Khukhuru	8. Ear
9. Ingoolo	9. Back of a Head
10. Lusaya	10. Cheek
11. Likosi	11. Neck
12. Libeka	12. Shoulder
13. Sifuba	13. Chest
14. Libeele	14. Breast
15. Inda	15. Stomach
16. Ikhofu	16. Navel
17. Kumukhono	17. Hand
18. Sikalabo	18. Palm
19. Lulwala	19. Finger
20. Ikhumbo	20. Elbow
21. Musibuno	21. Waist
22. Kamatakho	22. Buttock
23. Lirango	23. Thigh
24. Lisikamo	24. Knee
25. Lukhone	25. Behind the Knee
26. Inumbu	26. Culf
27. Kumwasi	27. Front Calf
28. Khasengengele / Khaserekelele	28. Ankle
29. Ikhukunyu	29. Heel
30. Ibetswa	30. Hip
31. Sikhandakilo	31. Foot
32. Tsitsala	32. Toes
33. Kumukongo	33. Back
34. Sisyole	34. Bald
35. Bufumbo	35. Eye lashes
36. Mukhwaha	36. Armpit

## KUMUKHOOSI KWE BILYO MWIBILI (HUMAN ALIMENTARY CANAL)



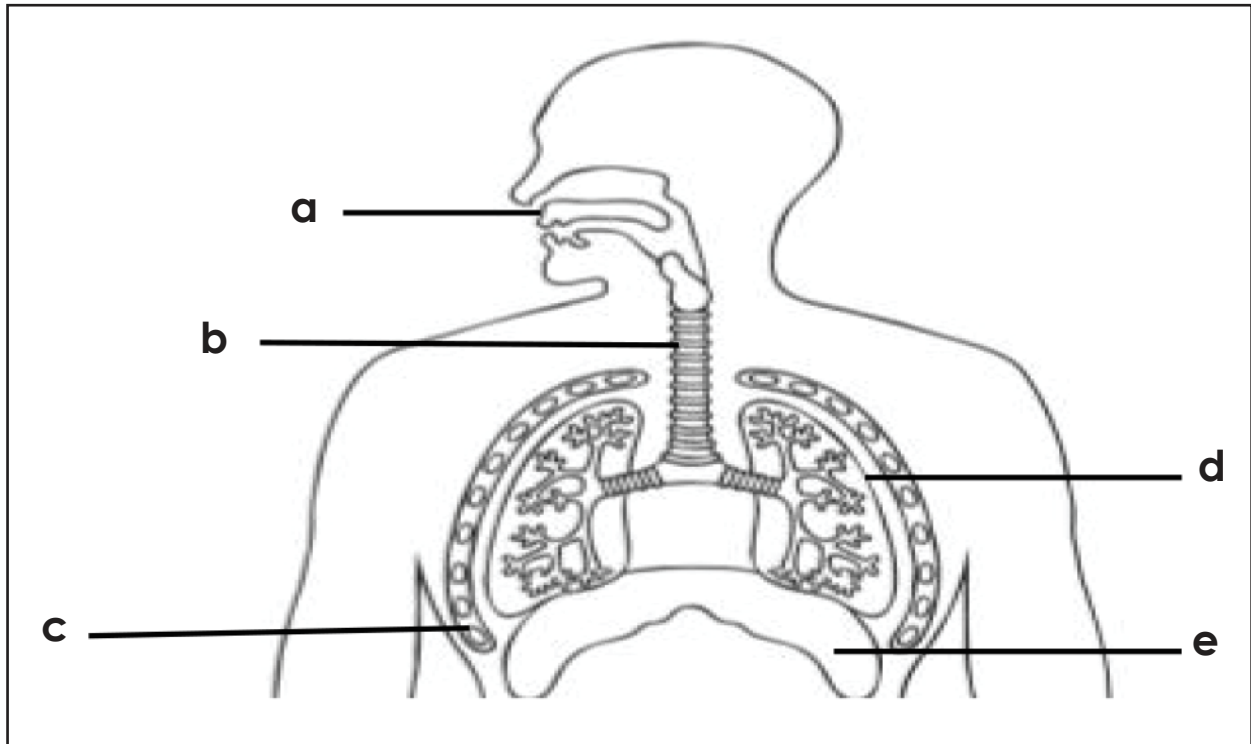
### LUMASAABA

- a. Kumunwa
- b. Ikokopi / Likokopi
- c. Siini
- d. Liwunya
- e. Kamala Kamafiti
- f. Khasawu khe bubaale
- g. Luyima
- h. Kamala Kamaboofu
- i. Lisombo
- j. Lufundikhilo
- k. Luusi

### ENGLISH

- a. Mouth
- b. Gullet
- c. Liver
- d. Gall Bladder
- e. Small Intestine
- f. Appendix
- g. Large Intestine
- h. Pancreas
- i. Stomach
- j. Rectum
- k. Anus

## IMBEELA YO MUNDU MWIBILI (RESPIRATORY SYSTEM)



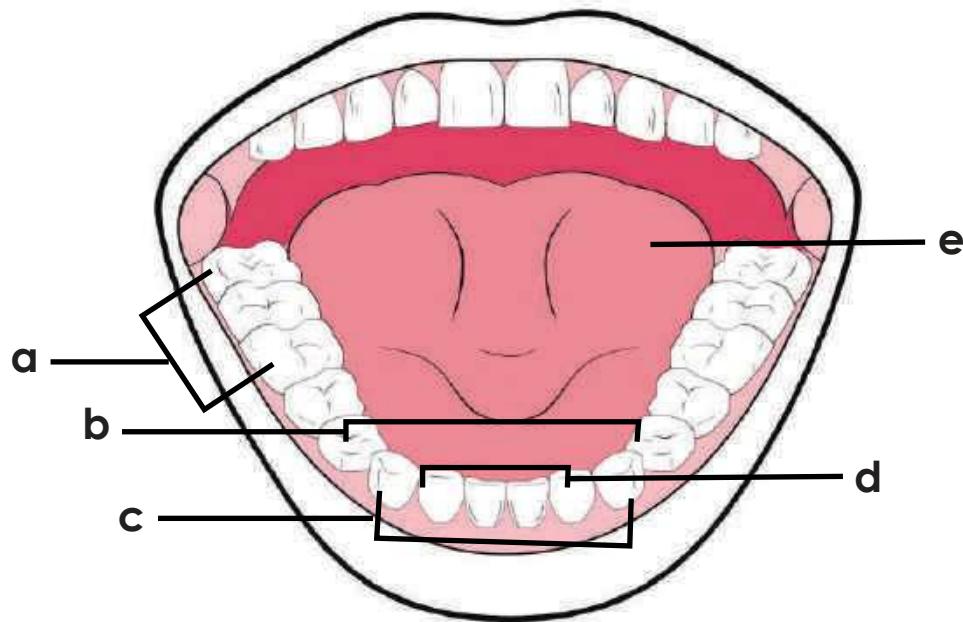
### LUMASAABA

- a. Lilyoolu
- b. Litaya
- c. Busya bwe Litsukhu
- d. Litsukhu
- e. Sihili

### ENGLISH

- a. Nose
- b. Windpipe
- c. Lung
- d. Bronchus
- e. Diaphragm

## BIKUUKA BYE KAMEENO (TYPES OF TEETH)



g



f

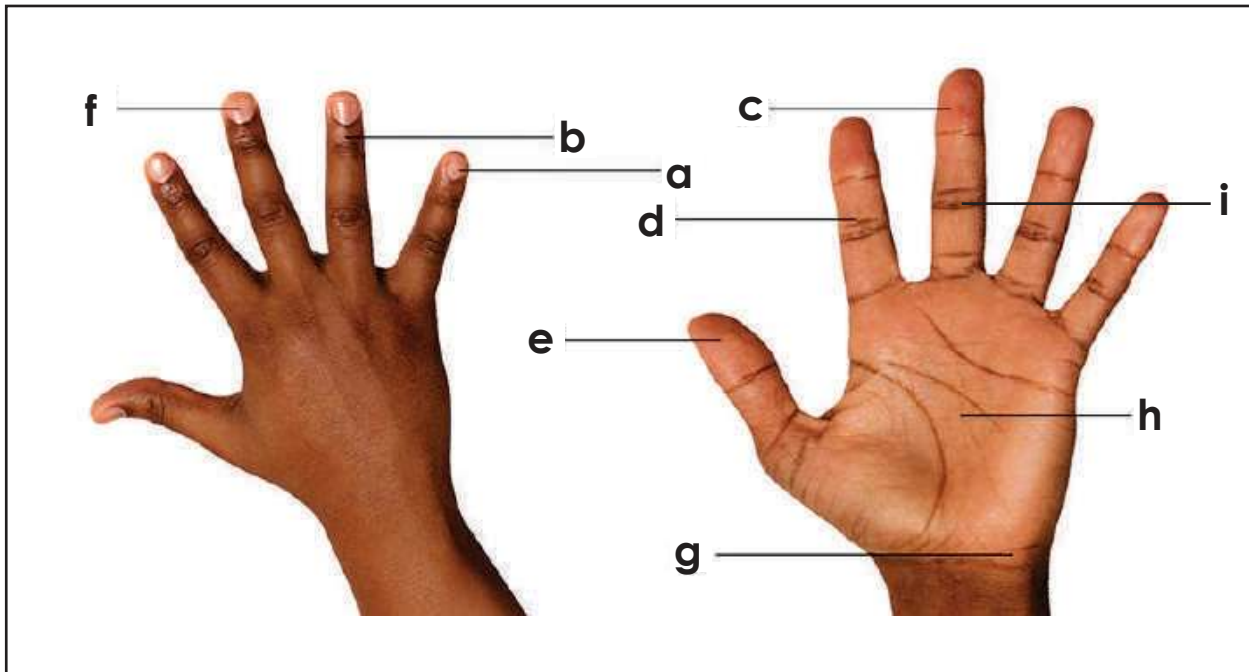
### LUMASAABA

- a. Kangekwe
- b. Kangekwe
- c. Kambwa
- d. Kamaceme
- e. Lulimi
- f. Imbanya
- g. Ifwolo

### ENGLISH

- a. Molars
- b. Premolars
- c. Canine
- d. Incisors
- e. Tongue
- f. Diastema
- g. Dimple

## BISINTSA BYE KHUMUKHONO (PARTS OF A HAND)



### LUMASAABA

- a. Khafubi
- b. Londa Ushu
- c. Tondobania / Kulula
- d. Lusomelo / Kulula
- e. Lusukhumwe
- f. Kamatere
- g. Musikhofu
- h. Sikalabo
- i. Tsinyengo

### ENGLISH

- a. Little Finger
- b. Ring Finger
- c. Middle Finger
- d. Index Finger
- e. Thumb
- f. Finger Nail
- g. Wrist
- h. Palm
- i. Finger Joints

## 2. TSISOLO (ANIMALS)

Learners need to know about animals (at least 20) in our environment, their uses and habitats

- a) Common domestic animals
- b) Wild animals

Note: Only a few of this have been represented; make a list of common animals as you identify them to build on those that occur in our environment

### IMPORTANCE OF ANIMALS:-

- Food
- Income
- Industries eg bags, shoes, music instruments, etc
- Medicine
- Tourism and leisure
- Education
- Foreign exchange
- Totems
- When they decompose they fertilize the soil.

### BISOLO BYE MUN'GO (DOMESTIC ANIMALS)

Bisolo bimenya aango nibyo bino:- Ikhafu, ipunda, ipuusi, imbwa, imbusi, imbalasa, Likhese imbitsi, matuyu, ni tsitsindi.

### NE BILAYI BYE BISOLO BINO NIBYO BINO:-:-

- Khulya Inyaama yatso
- Khunywa kamabeele katso
- Khukulisamo kamapeesa
- Tsiyeyi khulimisa
- Imbwa Ikhulinda aango
- Ipuusi Ilya tsimbeebeba
- Kamasyelo kabyo khufunamo bulili tsisawu tsingato
- Biraro, kimisipi, tsikooti ni bibindi
- Bibutusi khwakholamo bupesa, igamu, bikopo,imbaleela
- Kamasisye kabyo kaba mboleela

## **BISOLO BYE MUSIRU (WILD ANIMALS)**

Bino bitwela khubisolo bye musiru  
Namunyu, ingutu, ikhipwe, imongo, luluntsiri, ikonya  
mukoyobaka, mambalewo, itiika , intsofu, isukhuru, ifuubu,  
napuru, ikhulo, mangololosyo ni tsisindi.

### **BILAYI BYE BISOLO BYE MUSIRU:-**

- Khufunamo kamapeesa nga bakyeni bitsile khulambula
- Khulya tsinyama tysabyo
- Khufunamo tsingato , kimisipi , tsikooti, khukhwama  
mumasyelo katsyo
- Bibutusi ni kamasanga khufunamo bupoki, tsikhombi ni  
bibndi
- Libikhilo lye tsisolo khufunamo kyimilimo

**TSISOLO TSE MUN'GO (DOMESTIC ANIMALS)**



**Ikhaafu**  
**(Cow)**



**Imbusi**  
**(Goat)**



**Imbwa**  
**(Dog)**



**Matuyu**  
**(Rabbit)**





**Likheese**  
**(Sheep)**



**Ipunda**  
**(Donkey)**

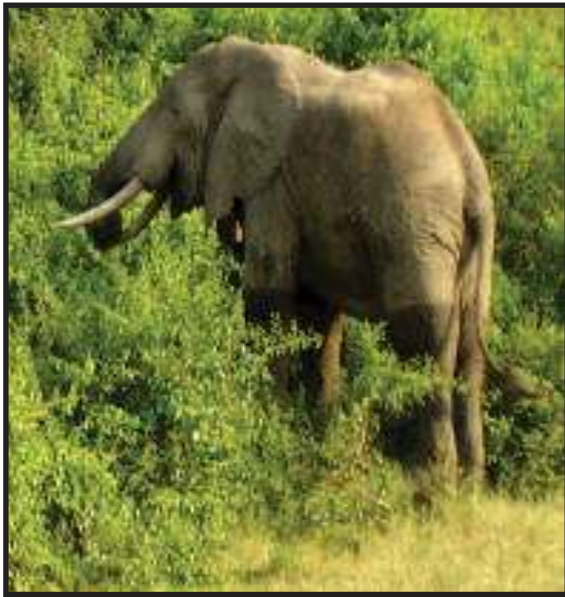


**Tsinguruwe / Tsimbitsi**  
**(Pigs)**



**Ipuusi**  
**(Cat)**

**TSISOLO TSE MUSIRU (WILD ANIMALS)**



**Intsofu  
(Elephant)**



**Tsifubu  
(Hipopotamus)**



**Napuru  
(Rhinoceros)**



**Imbitsii ye musiru  
(Warthog)**



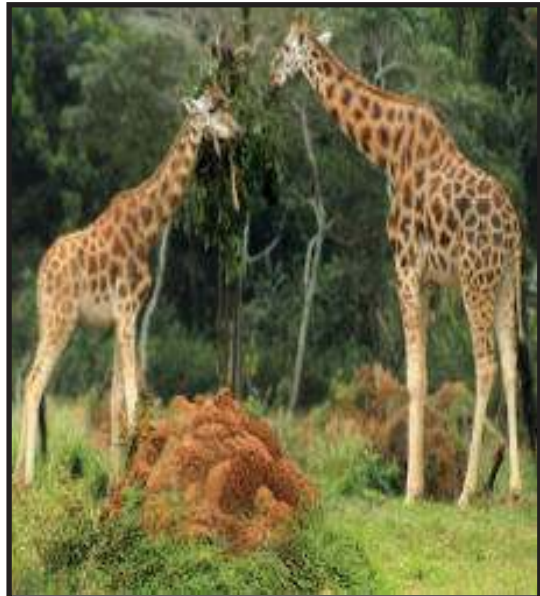
**Mong'ololosyo**  
**Zebra**



**Ikulo**  
**Kob**



**Imbeba**  
**Rat**



**tsitika**  
**Giraffe**



**Imboko**  
**Buffalo**



**Namunyu**  
**Hyena**



**Ikonya**  
**Crocodile**



**Ingutu**  
**Tortoise**



**Khawu**  
**Squirrel**



**Italanyi**  
**Lion**



**Patuukha**  
**Fox**



**Imongo**  
**Waterbuck**



**Ingwe**  
**Leopard**



**Buyusi**  
**Baboon**



**Inguke**  
**Chimpanze**



**Indeela**  
**Cheetah**



**Sibulukhu**  
**Tiger**



**Lisiilikhe/Kunaani**  
**Gorrila**



**Ikhobe**  
**Monkey**

## KAMABIKHILO KE BISOLO BYE MUSIRU KAKAALI MU UGANDA

- a) Sitongole sisilinda bisolo bye musuru mu Uganda.
  - Kamabikhilo ke bisolo bye musiru.
  - Kamabikhilo ke bisolo bye musiru kamafiti.
- b) Sitongole sisiilinda bisaali mu Uganda (bisaali bifiti bili byenga mu Uganda?)
  - Bisaali bifiti.
- c) Sitongole sye kametsi ni bikhwibotookhelele (Bola tsinyatsa tsimbofu ni tsintsitsi mu uganda).
  - Tsinyatsa, tsintsitsi ni kameetsi ke mwiloba.
  - Birende.
- d) Sitongole sye byebulimi , bubwayi ni tsigeni.
- e) Sifwo syesi basomelakho bisolo bye musuru mu Uganda.
  - Sifwo syesi basomelamo tsisoslo tsye musuru.
- f) Sifwo syesi khubikhamo tsisolo tsye musuru tsa burawo.
- g) Sitongole sisilolelela bikhwibotookhelele.

## INSTITUTIONS THAT MANAGE WILDLIFE AND THEIR HABITATS IN UGANDA

- a) Uganda Wildlife Authority ( How many National Parks are Uganda).
  - a. National Parks.
  - b. Wildlife reserves.
- b) National Forestry Authority (How many forest reserves are in Uganda).
  - a. Forest reserves.
- c) Ministry of Water and Environment (Mention big lakes and rivers in Uganda).
  - a. Lakes, rivers and ground water.
  - b. Wetlands.
- d) Agriculture animal industry and fisheries.
  - a. For domestic animals and fish.
- e) Uganda Wildlife education center.
  - a. Animals in captivity.
- f) Every human being.
  - a. Animals in sanctuaries and our surroundings.
- g) National Environment Management Authority.
  - a. Regulation of use



## BISOLO BIBINDI.

Tsindemu ni tsikheele tsimenya musiru. Tsikhelee tsimenya ambi ni kameetsi. Tsireera kamaki kawe mu meetsi. Kamaki kalukhamo mubwana. Bubwana babulanga bari woyaka. Buwoyaka buhela bwingisa kameetsi ne tsikhele tsihela tsingisa imbewo. Tsikhle tsilya biwukha ni kamambo ne tsindala tsilya tsingumunyu nga tsirambisa tsinimi tsyawe tsindeyi tsilikho ikaamu.

Tsindemu natsyo tsimenya mu sisintsa sikhwibotookhelele. Tsindemu tsindala tsili ni butsiba bukhonya, ne tsifura bukali itsili ni busiba bukhonya taa.

Wakhile kumanya tsindemu tsili ni busiba bukhonya ni tsikhali nabo taa. Sisili silayi umundu yesitsana ukhwinyaha ni tsinemu oba tsikhele taa.

Sili silayi khusawa kumusuru kuli ambi nintsu lwekhuba ni khuwanyaka kameetsi kakhatima ta ango

Lwe khuba kakhongeleza tsinemu khukhwingila mun'go. Inga inemu yingile muntsu nenga sunyala khukiwona muremo ta laanga bekamakambila bitse bakhuyete khukirusamo.

## OTHER ANIMALS.

Snakes and frogs live in bushes. Frogs live near water. They lay their eggs in water. The eggs hatch into young ones called tadpoles. Tadpoles breath in water. Frogs breath in air. Frogs mainly eat insects and worms. Some eat snails. They use their sticky tongue to catch their prey. Snakes also live in our environment. Some snakes are poisonous. Their bites can kill. Most snakes are not poisonous. But you need to know which ones are poisonous and which ones are not.

Its not good for anybody to play with snakes and frogs. Its important to remove the bush which attract snakes near our homes and water logged places which attract frogs. If snakes get into the house and cannot be scared away, call the authorities to capture it and take it away. This is in case you cannot scare or repel them away.

## **TSIKHELE (FROGS)**

Tsikhele tsimenya ambi ni kameetsi.

Tsirera kamaki mumeetsi tsihela kumukha.

Tsikhele tsilya bikuukku ni biwukha ne tsindi tsilya tsikhumuniu.

Tsikhele tsiyetesa lulimi lulikho Ikaamu khuwamba bye khulya.

## **TSINDEEMU (SNAKES)**

- Tsindeemu natsyo tsili bibindu bibikhwibootokheleye mu sifwo.

- Tsindeemu tsindala tsili ni butwa bunyala bwa khwira.

- Tsindeemu tsifura bukali itsili ni butwa taa. Nashiryo, wakhile umanye tse butwa ni tsikhali tse butwa taa.

- Sisili silayi buli mundu khukhwirala tsindeemu taa

- Siba sikhulu khulakhulekha Kumusiru khumbi simbi khokhongelesa tsindeemu ambi aango.

- Khuli ni khurusawo kameetsi kaka khwiootokhe lele, Khula khukhongelesa tsikhele ni tsindeemu.

- Inga wanyolile tsindeemu mutsuu, ukha sipa taa. Ne langa bebunyala batsihambe batsiyile.

## BISOLO BIBINDI (OTHER ANIMALS)



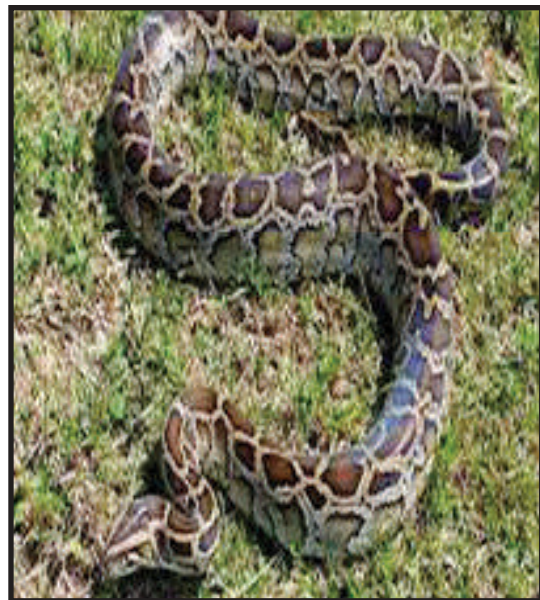
**Mambalewo**  
**Cobra**



**Muwu**  
**Snake**



**Liwurukuru**  
**Bat**



**Mukoyabaka**  
**Python**



**Ikhele**  
**Frog**



**Isyolo**  
**Lizard**



**Ikhaniafu**  
**Chameleon**



**Imbakilya**  
**Lizard**

### 3. BIWUKHA.

Basomi bakhile khusoma khubiwukha bya busyele, bisinta byabyo, ni kyimikaso kyabyo

- Kamasiina kebiwukha byabusyele
  - Bisintsa
  - Tsingeli tsi bili tse menya mukhusalisa khwabyo
  - Bikuuka bye biwukha byabu syele;
- Biwukha bya busyeele.
- Biwukha biluma.
- Biwukha bye kyimikaso nga kyino; bilyo ,khusalisa bilimwa, tsiwutsi tsamanila, ni kamalesi.
- Biwukha bireera tsifu / bulwale.
- Biwukha bye mbuka nga ; kamateete, tsisikye, tsikhunguu.

#### **KYIMISKASO KYE BIWUKHA:-**

- Ifuna
- Bilyo
- Isatisa ye khubimuli
- Kamalesi
- Kamakholelo kakhola tswiwutsi tsamanila/tsanailoni
- Khulosela imboleela mwiloba
- Imbentselesa ni bulekeeli
- Khuboosa liloba nio lyamamo bilyo byetsingokho

### 3. INSECTS.

Learners should learn about common insects, their parts and uses particularly their:-

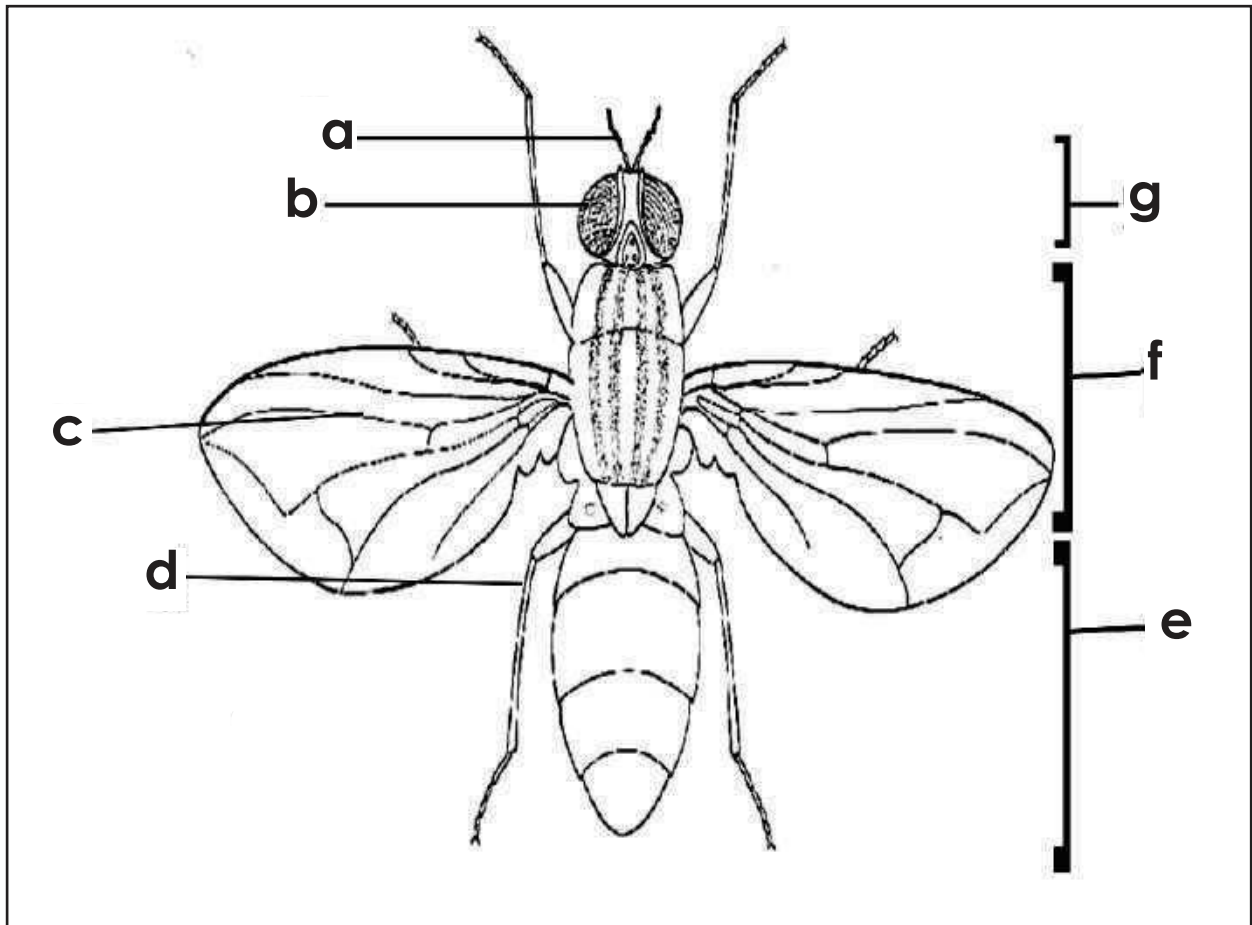
- a) Names of common of insects
- b) Parts
- c) The two kinds of reproductive life cycles
- d) Classification of insects

- i. Common insects
- ii. Biting insects
- iii. Useful insects e.g food, pollination, silk, medicine
- iv. Insects that cause diseases – vectors
- v. Social insects
- vi. Insect seasons e.g. grasshoppers, armyworms, locusts

## **IMPORTANCE OF INSECTS:-**

- Income - **Ifuna**
- Food - **Bilyo**
- Pollination - **Isalisa ye khu bimuli**
- Medicine - **Kamalisi**
- Industries e.g silk worm - **Siwukha sisaala tsiwutsi tsanalooni**
- Soil fertilization - **Khulosela imbolela mwiloba**
- Education and research - **Imbentselesa ni bulekeeli**
- Decomposition e.g houseflies produce maggots which can be fed to chicken (**Khuboosa**)

## BISINTSA BYE SIWUKHA (PARTS OF AN INSECT)



### LUMASAABA

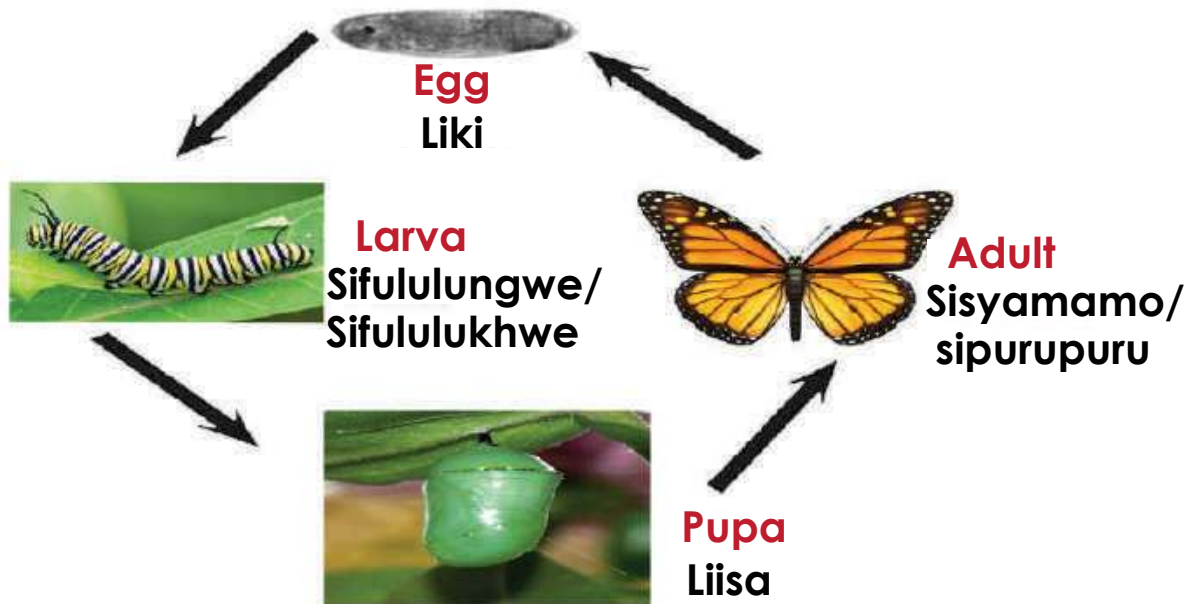
- a. Lukiina
- b. Imoni
- c. Lutaha
- d. Sikele
- e. Lutta
- f. Sifuba
- g. Kumurwe

### ENGLISH

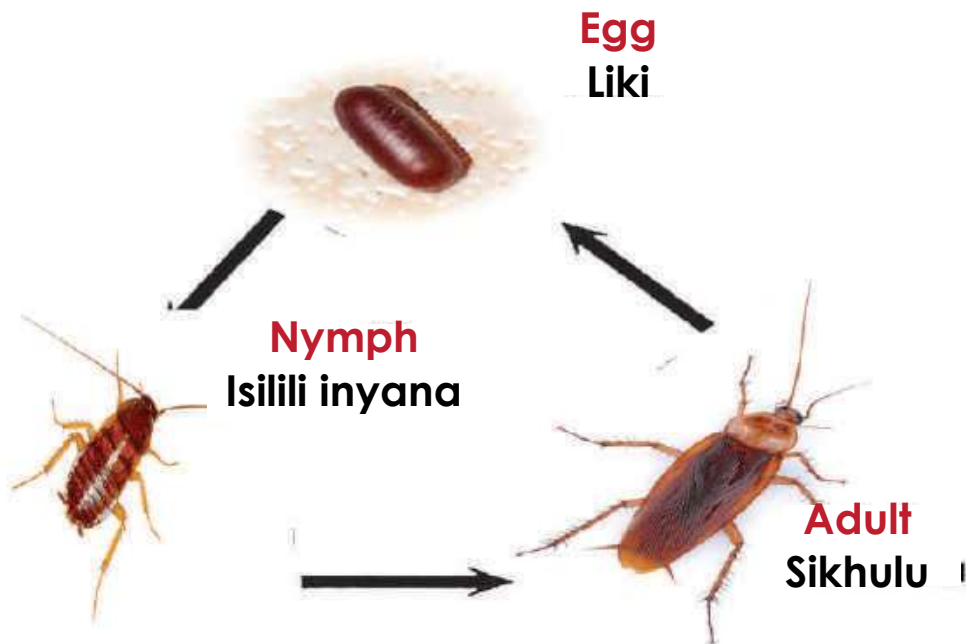
- a. Antenna
- b. Compound Eye
- c. Wing
- d. Leg
- e. Abdomen
- f. Thorax
- g. Head

# KAMADDALA KE ITSOWA YE SIWUKHA (LIFE CYCLE OF INSECTS)

## COMPLETE CYCLE OF A BUTTERFLY



## Incomplete Cycle of a Butterfly





## BIWUKHA (INSECTS)



Sifululungwe/Sifululukhwe  
**Caterpillar**



**Liisa**  
**Pupa**



**Isilili**  
**Cockroach**



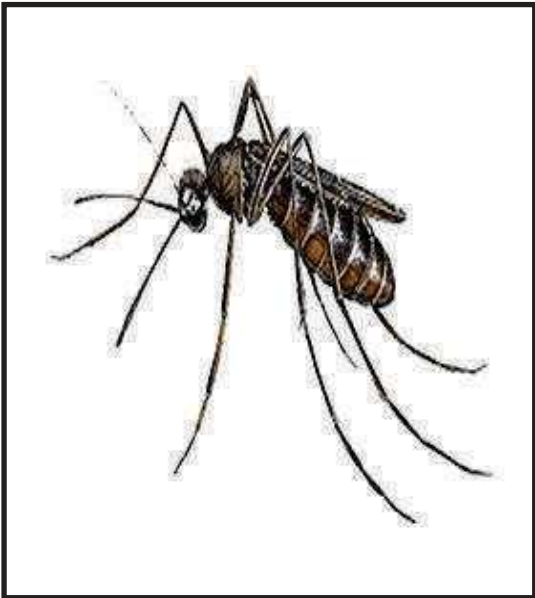
**Sipurupuru**  
**Butter Fly**



**Likongolyo**  
**Millepede**



**Like**  
**Termite**



**Khakuntsyu**  
**Mosquito**



**Isame**  
**House Fly**



**Litingwi**  
**Safari Ants**



**Indukusi**  
**Solider Ant**



**Lifu**  
**Paper wasp**



**Isenene**  
**Grasshopper**



**Iswa**  
**Safari Ants**



**Lilyanyina**  
**Queen ant**



**Likimbafula**  
**Earth worm**



**Ikhumuniu**  
**Snail**



**Liteete/Liaandi**  
**Locust**



**Kamaalamba**  
**Wasp**



**Tsanyanga**  
**Praying Mantis**



**Inyentse**  
**Cricket**



**Bikuwa**  
**Ticks**



**Kamakokowe**  
**Sugar ant**



**Nabubi**  
**Spider**

## 4. BINYWINYWI.

Khulini binywinywi bikuuka bikali mu sisintsa syefwe siskhwi botookhelele.

Binywinywi bye sikuuka siboofo sitwela binyolekha mun'go mwefwe ate sikuuka sisindi siboofo sye khabili sinyolekh-ana musiru. Byesi khulinda mun'go mwefwe bili byekhulya ni khukulisa khwafunamo kamapeesa.

### **KIMIKASO KYE BINYWINYWI BYE MUN'GO:-**

- Khubiilya nga bilyo
- Kamasilyokokho kabyo imbolela
- Khukulisa khwafunamo kamapeesa
- Khufunamo kamalesinga kamaki khukangila imbalu
- Khusomelakho ate khwahentseleselakho

Binywinywi bye musiru byombekha tsitsu tsyabyo batsilanga bali biswi, khu khubisala, mwiloba oba khutsu tsyefwe.

### **KIMIKASO KYE BINYWI NYWI BYE MUSURI:-**

- Khubilya nga injanga, liwuusi , isiindu maaya ni kamaki kabyo.
- Bye kimisilo isi khwisaaya nga nooli.
- Binywinywi bibindi biboonekha bulayi babaandu babama aleeyi betsa khubibonakho bakhuya kamapeesa nga nooli, kasuku.
- nooli alini tsirangi tsingali tsesi bara khubbendela yefwe ye linambo lyefwe Uganda.
- Binywinywi bilala bisanyusa khubibonakho ni khubilinda.
- Binywinywi khubisomakho ate khabihetsele sakho.
- Binywinywi bi khubolela imbuka bubwile bwe khulima.

## 4. BIRDS.

There are many birds in our environment. Some birds are kept in our homes others are wild. The ones kept in our homes are mainly for food and for income. Common uses of domestic birds include:-

- Food for animal protein.
- Fertilizer from droppings.
- Income through employment as a poultry farmer and tourism.
- Some are kept as pets.
- Some are kept for medicinal purposes.
- For education purposes and research.

Wild birds live in nests built in trees, ground or houses. Some birds can fly while others cannot fly. Ostrich cannot fly. Birds are useful in many ways. They can:-

- a) Be eaten by humans e.g. Guinea fowl, doves, Quail, ostrich and their eggs etc.
- b) Are totems especially in Buganda region.
- c) Many birds are attractive for tourism called Avi-tourism which is source of income e.g. peacock.
- d) The national bird is crested crane; it has the colors of the national flag.
- e) Birds like parrots can be kept as pets.
- f) Birds can be learned about in education and research.
- g) Birds can predict time and seasons.



## **BINYWINYWI BYE MUNGO (DOMESTIC BIRDS)**

Khuli ni binywinywi bikali mubifo byefwe bikhwi batokhelele.

Binywinywi bilala khubibaya.

Ango bilala biba musiru.

### **KYIMIKHASO KYE BINYWINYWI BYE MUNGO:-**

- Binywinywi byesi khubaya Ingo khulya inyama.
- Khwakulisamo kwafuna kamapeesa.
- Binywinywi isi khubayaango biliwa lwe khulisa kimibili kyefive.
- Kamasilyokokho nako Khukarambisa nga imbolela mukunda kyeffe.
- Tsifwamu tsye tsingokho khuwandikha babandu Kimilimo.
- Ate tsifwamu tsye tsingokho ufuna balambusi ni babonelakho, bakuwa kamapeesa

## **BINYWINYWI BYE MUSURU (WILD BIRDS)**

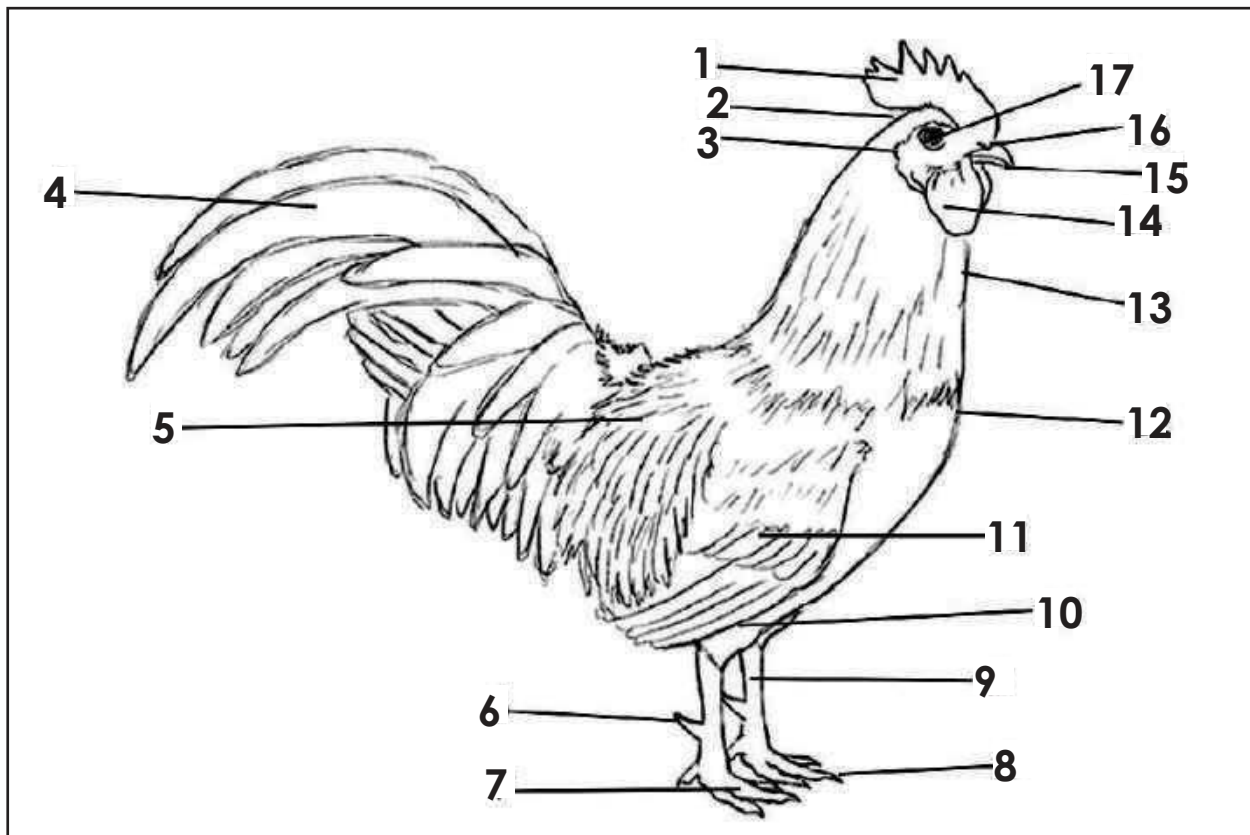
- Binywinywi bye musiru bimenya mu biswi Isi byombekha mu bisaala, biba ni mu tsitsu.

- Binywinywi bilala bipamburukha Ibindi taa. Maaya sapamburukha taa.

### **BINYWINYWI BILIKHO KUMUKASO KUMUKALI NGA:-**

- Babilya ngakhubonelakho, tsinanga, baalya ni kamaki katso.
- Binywinywi bilala lbuganda babisamo lukoosi mu bikuuka byawe
- Binywinywi bikali bikhongelesa bulambuzi ni khufunamo kamapesa.
- Ngooli khali khanywinywi khe linambo Iya Uganda.
- Binywinywi bilala bisanyusa khubibaya
- Binywinywi bilala bitebelesa tsimbeela.
- Bisanyusa babibaya nga maridadi ate bilala khubisomela kho
- Bibindi bikhu bolela isawa, syekhubonelakho.

## BISINTSA BYE INGOKHO (PARTS OF A BIRD)



### LUMASAABA

1. Luukina
2. Kumurwe
3. Khukhuru
4. Sitseke
5. Kamafumbo/ Kamoya
6. Siyikili
7. Tsinzala
8. Kamatere
9. Silenge
10. Inumbu
11. Lutaha
12. Sifuba
13. Likosi
14. Likhoyakhoye
15. Kumunwa
16. Lilyoolu
17. Imoni

### ENGLISH

1. Comb
2. Head
3. Ear
4. Main Tail
5. Feathers
6. Spur
7. Toes
8. Claws
9. Leg
10. Thigh
11. Wing
12. Chest
13. Neck
14. Wattle
15. Beak
16. Nostril
17. Eye

**BINYWINYWI BYE MUNGO (DOMESTIC BIRDS)**



**Itwaya  
(Cock)**



**Ingokho  
ni bunywinywi  
(Hen and Chicks)**



**Tsikulukulu  
(Turkeys)**



**Tsimbaata  
(Ducks)**



**Likhanga/Inanga**  
**(Guinea Fowl)**



**Tsikuruku**  
**(Pigeons)**

**BINYWINYWI BYE MUSIRU (WILDS BIRDS)**



**Tsetooto**  
**(Marabou)**



**Inyaanje**  
**(Cattle Egret)**



**Nalukosi**  
**(Grey heron)**



**Liḡasa**  
**(Horn Beak)**



**Liwusi**  
**(Dove)**



**Manaana**  
**(African green Ibis)**



**Namususuni**  
**(Sun bird)**



**Khoolo**  
**(Pled crow)**



**Isooso**  
**(Robin chat)**



**Ikhosi**  
**(Fish Eagle)**



**Isoka**  
**(Blue fly catcher)**



**Nandyole**  
**(Sparrow)**



**Kasuku**  
**(Parrot)**



**Imanda**  
**(Blue Turaco)**



**Nabutiti**  
**(Penduline tit)**



**Maṅoo**  
**(Weaver Bird)**



**Inyoofwe**  
**(Ostriches)**



**Namaturu**  
**(Vulture)**





**ηooli**  
**(Crested crane)**



**Isooso**  
**(Robin chat)**



**Sikhikhi**  
**(Owl)**



**Wafukhulu**  
**(Hammercop)**



**Namuselembwe**  
**(Long crested Eagle)**



**Kisilili**  
**(Hammercop)**



**Namakenya**  
**(King fisher)**



**Namushiyiko**  
**(Paradise fly Catcher)**



**Indutsu**  
**(African Hawk Eagle)**



**Ingobangobe**  
**(Grey horn bill)**



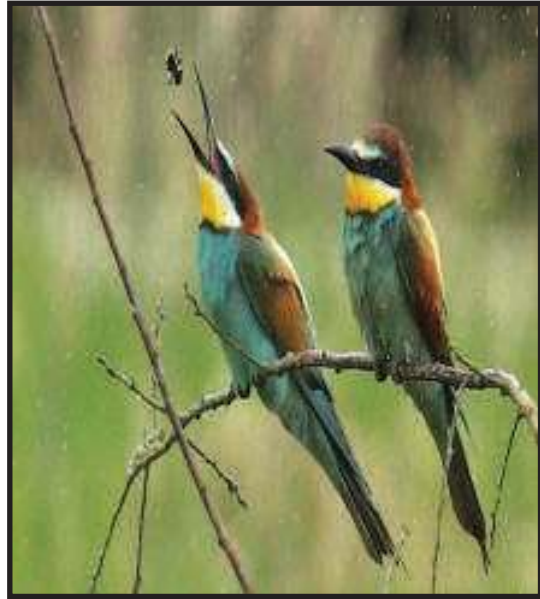
**Nabowo**  
**(Snake Eagle)**



**Wopiico**  
**(Kestrel)**



**Kholokholo**  
(Black Shoulded Kite)



**Namisinga**  
(Bee Eater)



**Wututu**  
(Ground Hornbill)



**Liwusi**  
(Ring-necked dove)



**Khakungu**  
**(Dove)**



**Nabikiiko**  
**(Spoon Bill)**



**Ingoye**  
**(Starling)**



**Isirisiri**  
**(Tinker bird)**



**Isoka**  
**(Blue fly catcher)**



**Isyeefu**  
**(Mouse bird)**



**Wangoolo**  
**(Plantain Eater)**



**Lityaatyasi**  
**(Fiscal Taita)**



**Ininga**  
**(Olive Pigeon)**



**Namutwitwi**  
**(Coucal)**



**Imiinyi**  
**(Dark Blue Swallow)**



**Namuriri**  
**(Cordon Bleus)**



**Isiindu**  
**(Quail)**



**Litsaalya**  
**(Ox Pecker)**



**Tsikhwale**  
**(Francolin)**



**Isirisiri**  
**(Tinker bird)**



## 5. BIKUUKA TSIŊEENI.

- Tsiŋeeni tsimenya, mutsinyatsa, mumeetsi katima, mubirende, nimumatila.
- Tsiŋeeni tsindaala batsibayila mu birende, ni mu bifwo byaburawa mu nyaatsa.
- Tsiŋeeni tsikenda nga tsirambisa tsindaha, tsihela nga tsirambisa kamaswaswa.
- Khuliyo ni bikuuka bikaali naabi bye tsiŋeeni tsimenya mu meetsi kamamiliyu.
- Tsiŋeeni tsimboofu tsimenya mu tsinyantso tsimboofu, ni mumeetsi kacumbu.
- Tsiŋeeni tsili tsye kumukaso isi babaandu;
  - Tsifura bukaali tsiliwa khurera kaamani mwibili
  - Tsiŋeeni tsili sitwela khu bindu birera kamaani mubilyo bye tsiŋeeni.
  - Tsiŋeeni sili sisindu sisirera ifuuna mu baloobi be tsiŋeeni ni batsikulisa
  - Sili sissindu sye buleekeli ni khuwe nzelesakho.
  - Tsiŋeeni tsili bibindu bye kiminyawo nga bali khutsiloba
  - Tsiŋeenitsindala tsili tsye kimisilo, nga iŋeeni naambeelee.

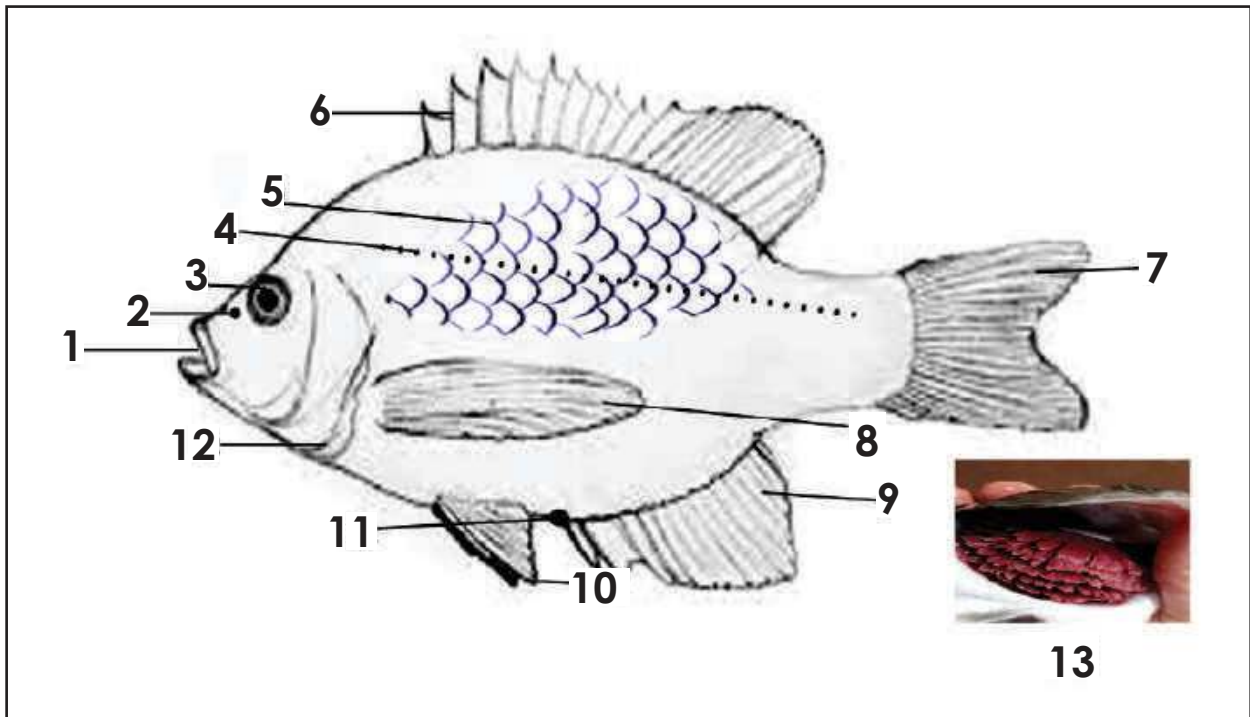
## 5. FISH.

Fish live in water habitats such as lakes, rivers and wetlands. Some fish can be grown in ponds. They can also be grown in cages made in lakes. They move by use of their fins and breathe by using gills. There are many types of fish which live in freshwater. Sharks live in oceans and marine salty water. Fish has many uses to humans.

- a) Many of them can be eaten to provide proteins.
- b) Fish is source of protein for animal feeds.
- c) Fish is source of medicine e.g silver fish and nkejje.
- d) Fish is source of income to fishermen and fishmongers.
- e) They are for education and research.
- f) They are for sport fishing.
- g) Some fish are totems e.g lungfish and nkejje.

**Learn about fish found in Uganda in a song, poem or story.**

# BISINTSA BYE INEENI (PARTS OF A FISH)



## LUMASAABA

## ENGLISH

- |                              |                     |
|------------------------------|---------------------|
| 1. Mukhanwa                  | 1. Mouth            |
| 2. Lilyoolu                  | 2. Nostril          |
| 3. Imoni                     | 3. Eye              |
| 4. Lukhumbiri                | 4. Lateral line     |
| 5. Kamakakayu                | 5. Scales           |
| 6. Lutaha                    | 6. Dorsal fin       |
| 7. Sitseke                   | 7. Tail fin         |
| 8. Lupapiriwo lwe khu sifuba | 8. Pectoral fin     |
| 9. } Lutaha lwe Khundulo     | 9. Anal/Ventral Fin |
| 10. }                        | 10. Pelvic fin      |
| 11. Luusi                    | 11. Vent/Anus       |
| 12. Lusaya                   | 12. Gill cover      |
| 13. Kamaswaswa               | 13. Gills           |

## BIKUUKA BYETSINĒENI (FISH)



**Ingege**  
**Tilapia**



**Imbuuta**  
**Nile perch**



**Tsisila**  
**Cat fish**



**Mukene**  
**Silver fish**



**Bukejje**  
**Haplochromine**



**Synodontis**  
**Kyekyekye**



**Wehanga**  
**Mud Fish**



**Nambeelee**  
**Lung Fish**

## 6. BILIMWA.

Bisaala ni tsisolo bili bye kumukaso basomi khubimanyakho.

Khuli ni bikuuka bye bimuli bye bisaala.

Binyala byarakho bimuli bimela ni lisaafu litwela oba ni kamasaaфу kabili.

Bisinta bye bisaala bili bye kumukaso naabi khubi somakho nga tsindi, kamasaaфу, sisina tsisoca, bimuli ni bikhamula.

Kamadala ke tsimitso khumela nako ke kumukaso khumanya nga mubikholela atwela ni basomi. Khukhwama khu lidala linyowa ni lisembayo.

### **BASOMI BALINA KHUMANYA BINO:-**

a) Bikuuka ni bisintsa byabyo , kamasaaфу, tsindi ni kimikaso kyabyo.

b) Kamadala ke tsimitso khumela.

c) Bisintsa bye tsimitso ni kimikaso kyatsyo.

d) Kimikaso kye bisaala bya busyele.

- Food ( Bilimwa bye khulya)
- Seeds (Tsimitso)
- Fruits (Bikhamula)
- Vegetables (Tsinyenyi)
- Medicinal plants( kamalesi)
- Common weeds (Kumusiru kwa busyele)
- Mushroom (Bubwoba)

e) Kimikaso kye bisaala bye musiru

## 6. PLANTS.

Plants like animals are important for learners to know about. There are two types of plants. Those that can bear flowers are called flowering plants and those that do not bear flowers are called non flowering plants. Flowering plants can be either monocotyledonous or dicotyledonous. The parts of the plant are useful to know about including the roots, the leaves, the stem, branches, flowers and fruits. The stages of germination are also useful to be demonstrated practically.

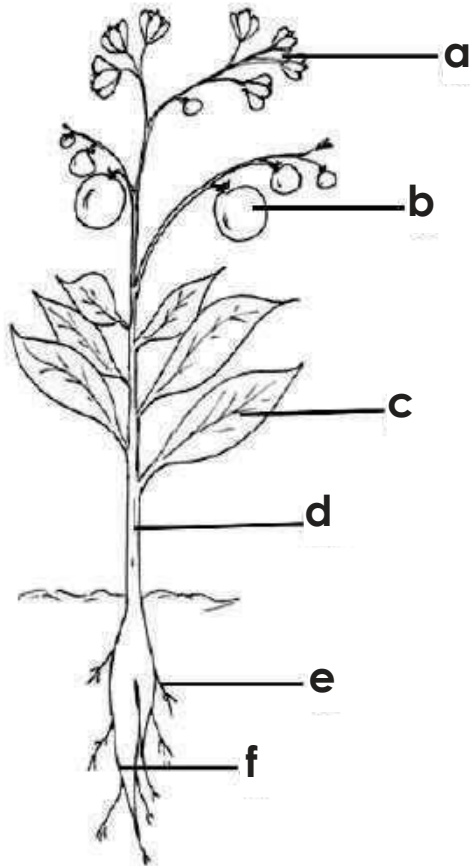
### LEARNERS SHOULD KNOW:-

- a) Types and Parts of the plants, leaves, roots and their uses.
- b) Stages of germination.
- c) Parts of seeds and their uses.
- d) Common Useful plants.
  - i. Food (Bilimwa bye Khulya).
  - ii. Seeds (Tsimitso).
  - iii. Fruits (Kamatunda).
  - iv. Vegetables (Tsinyenyi).
  - v. Medicinal plants (Kamalesi).
  - vi. Common weeds.
  - vii. Mushrooms (Bubwoba).
- e) Wild useful plants.

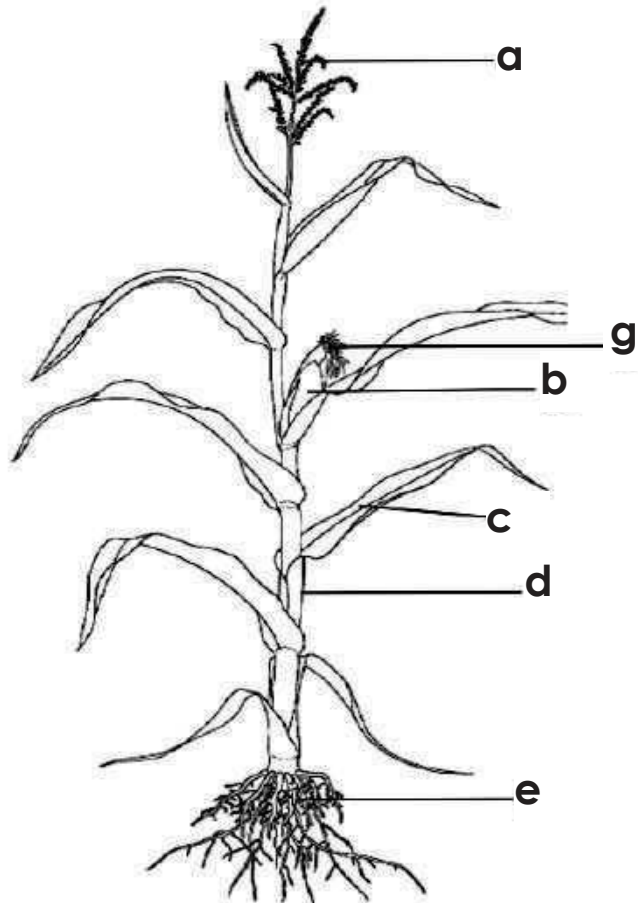


# BISINTSA BYE SISAALA (PARTS OF A PLANT)

## DICOT PLANT



## MONOCOT PLANT



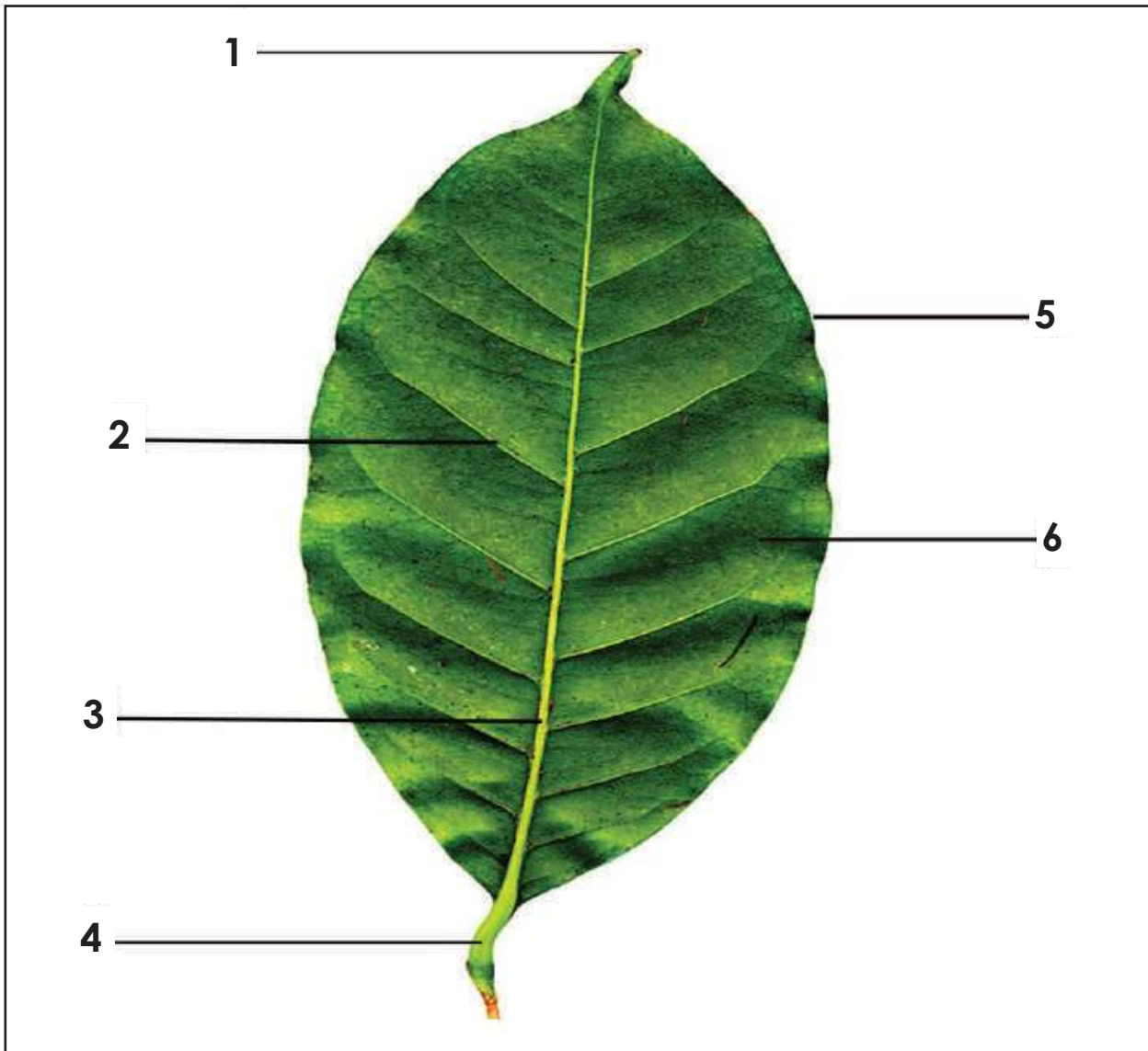
## LUMASAABA

- a. Siimuli/Kumuyanje
- b. Litunda
- c. Lisafu
- d. Sisina
- e. Tsindi
- f. Kumuli Kwehakari
- g. Bubutsitsi / Buyuntsu

## ENGLISH

- a. Flower
- b. Fruit
- c. Leaf
- d. Stem
- e. Roots
- f. Tap root
- g. Silk/Anthers

# BISINTSA BYE LISAAFU (PARTS OF A LEAF)



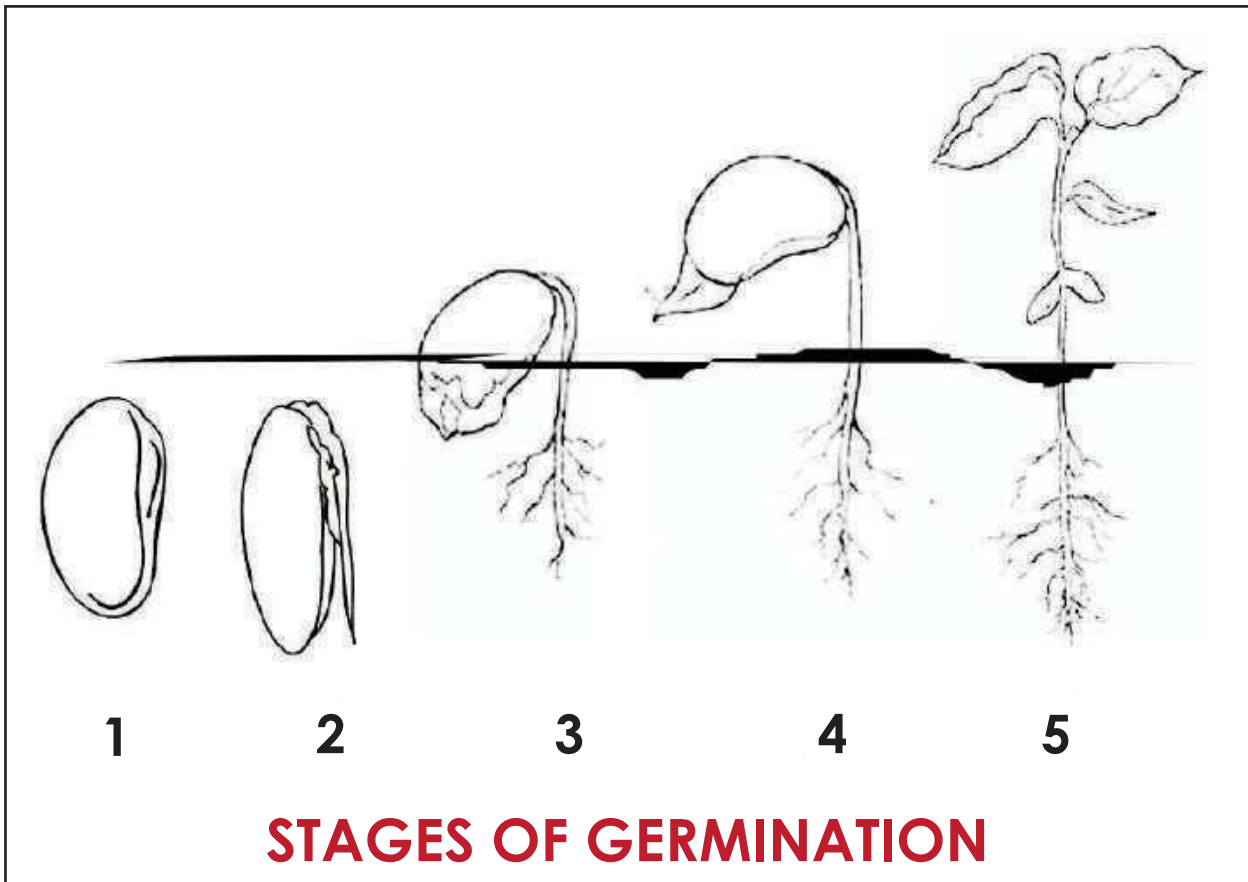
## LUMASAABA

1. Imishya
2. Kumushya
3. Lukhotsilya
4. Khakhono
5. Lisafu
6. Khundulo khwe lisafu

## ENGLISH

1. Apex
2. Vein
3. Midrib
4. Stalk
5. Leaf margin
6. Leaf blade

# IMELA NI NTSOWA YE IMITSO (SEED GERMINATION)



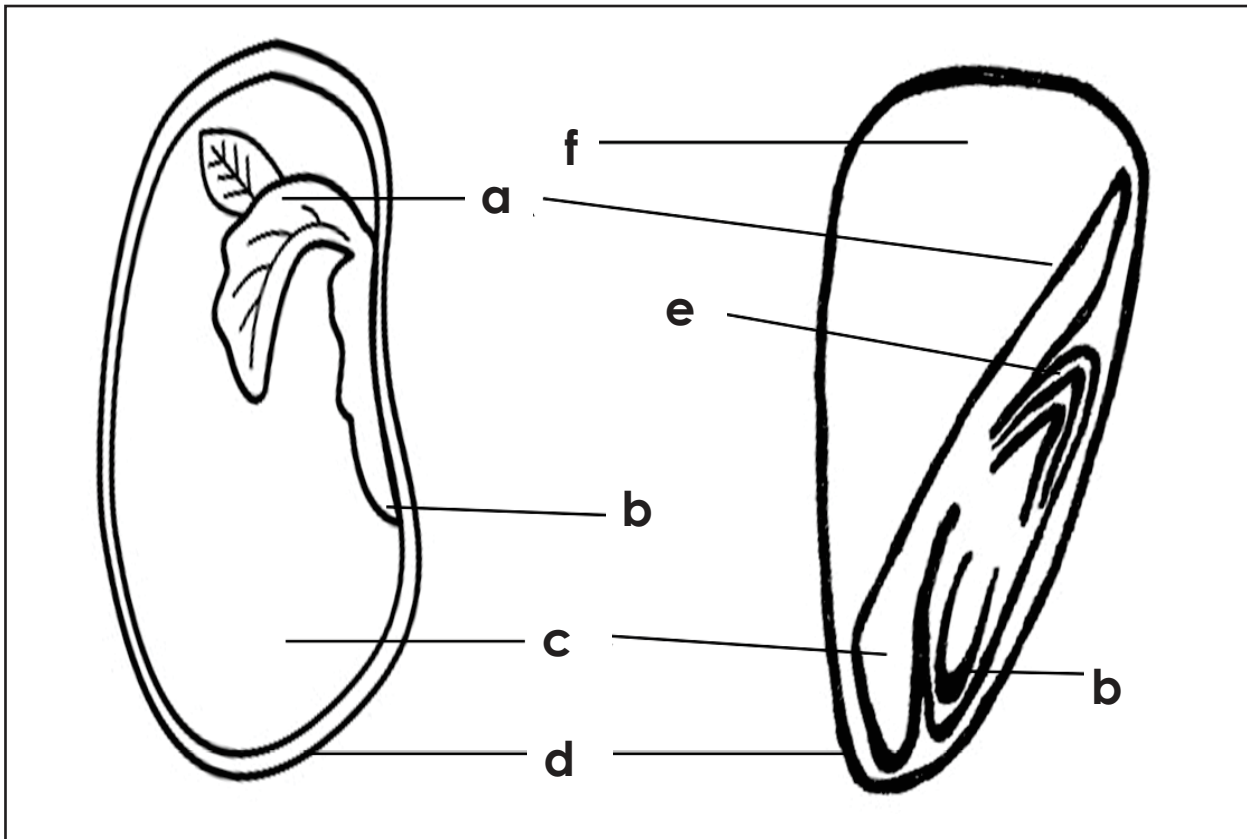
## LUMASAABA

1. Imitso imbyale
2. } Yarombele
3. }
4. Yarurile
5. Libala

## ENGLISH

1. Planted seed
2. Germinating seed
3. Rooting seed
4. Shooting seed.
5. Seedling

## BISINTSA BYE IMITSO (PARTS OF A SEED)



### LUMASAABA

- a. Kumurombo
- b. Luli
- c. Sikala / Bikala
- d. Likhobolyo
- e. Libala

### ENGLISH

- a. Embryo
- b. Radicle
- c. Cotyledon
- d. Testa
- e. Plumule

**BIILYO (FOOD)**



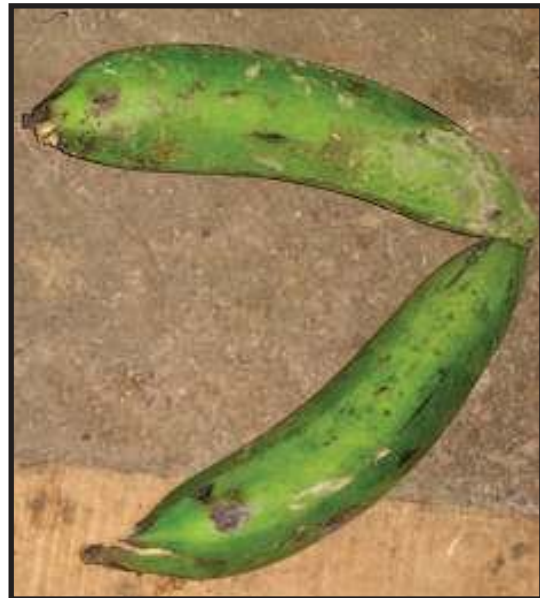
**Litoore**  
**Banana**



**Sisasi sye litoore**  
**Cluster**



**tsintzekhele**  
**Suckers**



**Tsimunga**  
**Banana finger**



**Sisina sye bitolotolo**  
**Yam plants**



**Bitolotolo**  
**Yams**



**Tsingoye tsye kamapwondi**  
**Sweet Potato**  
**Vines**



**Kamapwondi**  
**Sweet Potatoes**



**Liwondo  
Pumpkin**



**Kumusyebebe  
Pumpkin plant**



**Maito  
Ground nuts**



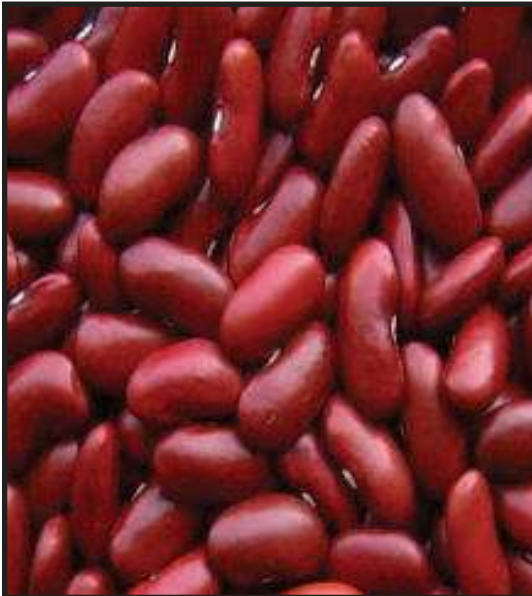
**Maito  
Ground nuts Plant**



**Kiminwa kya mwoko**  
**Cassava tubers**



**Bisina bya mwoko**  
**Cassava Plant**



**Kamakanda**  
**Beans**



**Kamakanda**  
**Beans plant**





**Kamakhunyu**  
**Air yams**



**Sisina sye Kamakhunyu**  
**Air yam Plant**



**Sisina sye imbama**  
**Yam plant**



**Imbama**  
**Yam plant**



**Bisina bya cukuyu**  
**Purple yam plant**



**Bitolotolo cukuyu**  
**Purple yam**

**BIMISWA (CEREALS)**



**Nasimya**  
**Maize Plant**



**Kimuyumbu kya nasimya**  
**Maize**



**Kumucere**  
**Rice corn**



**Kumucere**  
**Rice plantation**



**Kamahemba**  
**Sorghum**



**Buulo**  
**Millet**



**Injaano**  
**Wheat**



**Tsikhanu**  
**Simsim**

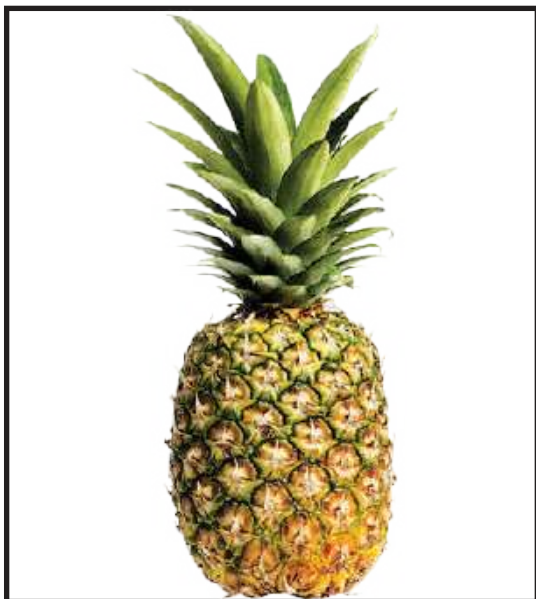
**BIKHAMULA (FRUITS)**



**Cimiyembe**  
**Mangoes**



**Siyembe**  
**Mango Tree**



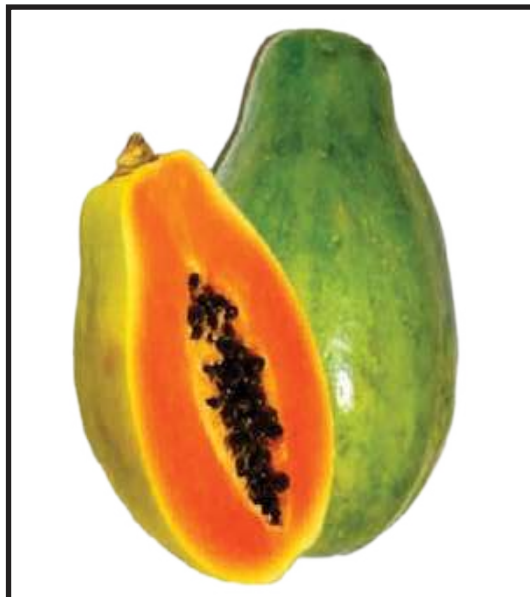
**Inanaasi**  
**Pineapple**



**Tsinanaasi**  
**Pineapple Plantation**



**Pawpaw Tree**  
**Lipapali**



**Kamapapaali**  
**Pawpaws**



**Kimiiba**  
**Sugarcane plants**



**Kimiiba**  
**Sugarcanes**



**Tsinyanya**  
**Tomatoes**



**Sisina sye tsinyanya**  
**Tomato Plant**



**Kumusitaferi**  
**Soursop**



**Sisitaferi**  
**Soursop Tree**



**Tsimbununwe**  
**Goose berry**



**Tsimbununwe**  
**Goose berry plant**



**Kookoyo**  
**Cocoa**



**Kookoya**  
**Cocoa tree**



**Kimifwenesi**  
**Jack fruit**



**Sifwenesi**  
**Jack fruit tree**





**Kimicungwa**  
**Oranges**



**Si cungwa**  
**Orange tree**



**Liwondo lye situnda**  
**Water Melon**



**Liwondo lye situnda**  
**Water Melon plant**



**Kamapeera**  
**Guava**



**Sipeera**  
**Guava tree**



**Fakedo**  
**Avocado**



**Sisaala sya fokedo**  
**Avocado tree**



**Bitunda**  
**Passion fruit**



**Situnda**  
**Passion fruit plant**



**Sambarawo**  
**Black Jamun**



**Sisambarawo**  
**Black Jamun tree**

## TSINYENYI (VEGETABLES)



**Kabbiji / Kapici**  
**Cabbage**



**Kumukunda kwa kapici**  
**/Kabbiji**  
**Cabbage Plantation**



**Bbilinganya**  
**Egg plant**



**Bbilinganya**  
**Egg plant**



**Bitungulu**  
**Onions**



**Bitungulu**  
**Onion plant**



**Karoti**  
**Carrot**



**Karoti**  
**Carrot plant**



**Tsitsaki**  
**Garden Egg**



**Sisina sye Tsitsaki**  
**Garden Egg Plant**



**Namutooto**  
**Ddoodo**



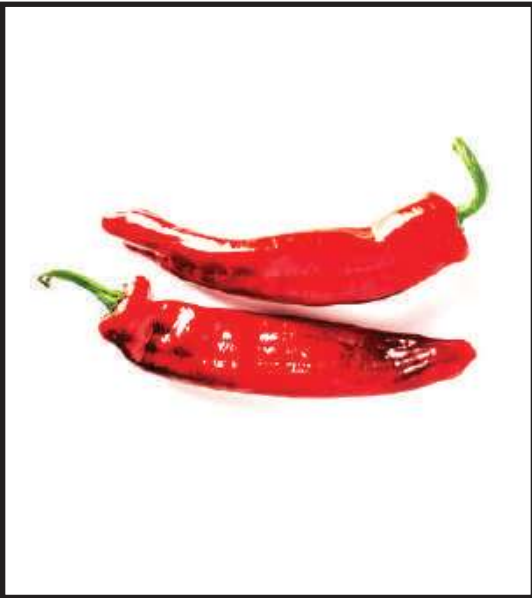
**Bisina bye Namutooto**  
**Ddoodo plant**



**Pilipili Khokho**  
**Green pepper plant**



**Pilipili Khokho**  
**Green pepper plant**



**Khamulali**  
**Hot pepper**



**Bisina bya khamulali**  
**Hot pepper plant**



**Bufwiti**  
**Bitter garden egg**



**Buyaki bufwiti**  
**Bitter garden egg plant**

**BILIMWA BIBINDI (OTHER PLANTS)**



**Imwanyi**  
**Coffee**



**Tsimwanyi**  
**Coffee tree**





**Iraba**  
**Tobacco**



**Sisina sye raba**  
**Tobacco plant**



**Litseketse**  
**Wandering jew plant**



**Lukholo**  
**Elephant Grass**



**Kamakatyakatya**  
**Aloe vera**



**Kamakhololwe/  
Kamakoololwe**  
**Papayrus**



**Sisyangwe**  
**Sponge**



**Sisyangwe**  
**Local Sponge**  
**Plant**



**Tsekuumi**  
**Pepper mint**



**Makowe**  
**Black jack**



**Fwamba**  
**Cotton**



**Fwamba**  
**Cotton plant**

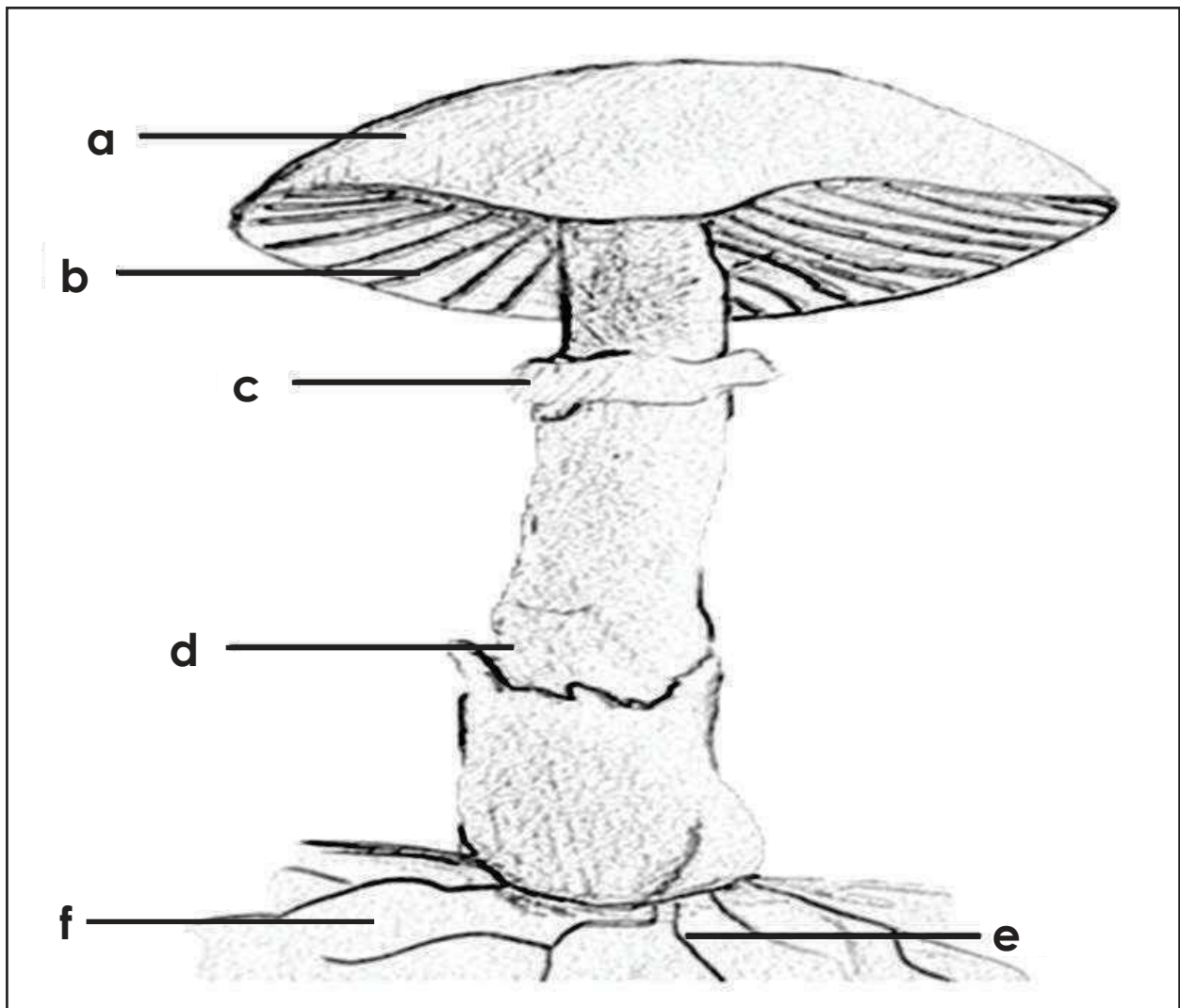


**Libombwe**



**Ishuwu**

## BISINTSA BYE LULWOBA (PARTS OF A MUSHROOM)



### LUMASAABA

- a. Sikala
- b. Kamaswaswa
- c. Intsiyi
- d. Kumukhondi
- e. Tsindi
- f. Kamabuyani

### ENGLISH

- a. Cap
- b. Gills
- c. Ring
- d. Stem / Stripe
- e. Mycelium / Roots
- f. Soil

## BUBWOBA (MUSHROOM)



**Butsolometsi**



**Nabitsikhi**



**Bumekele**

## BISALA (PLANTS)

Bilimwa bili bibindu bye kumukaso

Khuli ni bikuuka bibili bye bilimwa.

Bimela bimuli ni bikamela bimuli taa nga lulwoba.

Bilimwa bilala bimela lisaafu litwela ate bibindi bya mela

kamasafu kabili.

### **BISITSA BYE SILIMWA BILI BYE KUMUKASO:-**

- Tsindi, kamasafu, sisina, tsisoca, bimuli ni kamatunda.
- Nekamadala ke khumela nako kali ni kumukaso Inga nunakhola sye khubonelakho.
- Bisala bye musiru nga kumurumba, Kalituusi, silukhu, ni bibindi bili bye Kumukaso isi babaandu; bamisamo tsimbaawo, tsingu, kamadala, Kamalesi ni bibindi.

## 7. BIKUUKA BYE TSIRANGI

Khusoma khu tsirangi tsikhafwananata sisanyusa basomi khu khwawula bibindu bikhafwa nana taa, nga bilimwa, tsinanga, bye bubetsi ni bibindi.

Basomi balala tsirangi tsindala tsibasanyusa khufurakho tsitsindi.

Tsirangi tsindala tsyakhosa naabi khufurakho tsitsindi.

Basomi barambisa tsirangi khuwakha bifanani ni bilimwa.

Kamasina ke tsirangi sikafwanana mululimi lwefwe lumasaaba taa.

Tsirangi tsindala tsisili ni kamasina mu lumasaaba taa.

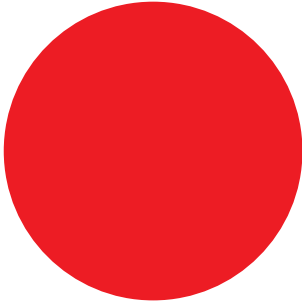
Balekeli bali ni khurona tsirangi ate bokesanise tsingeli isi tsirambisiwamo

## 7. COLOURS

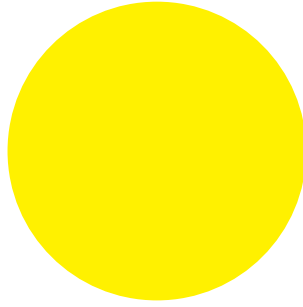
Learning about different colours entices learners to distinguish objects from one another i.e plants, clothes, furniture, etc. Some learners find some colours more attractive than others. Some colours are brighter than others. Learners use colours to shed objects and to paint pictures. The naming of colours may differ in local language. Some colours do not have equivalent names in local languages.

**Teachers should list the different colours and how they can be used**

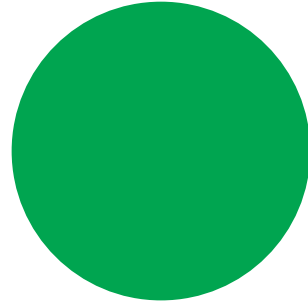




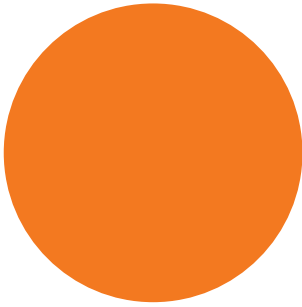
**Imbesemu**  
**Red**



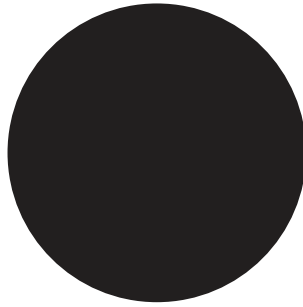
**Nabintsaali**  
**Yellow**



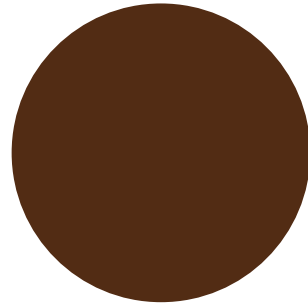
**Nalubookha**  
**Green**



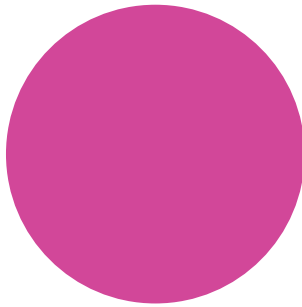
**Inunda**  
**Orange**



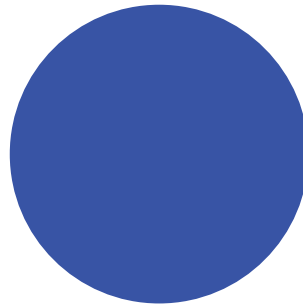
**Imali**  
**Black**



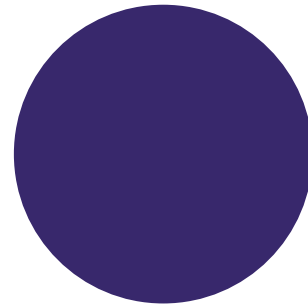
**Neloba**  
**Brown**



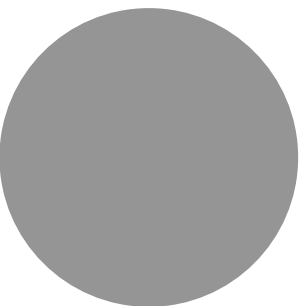
**Inyenjelu**  
**Pink**



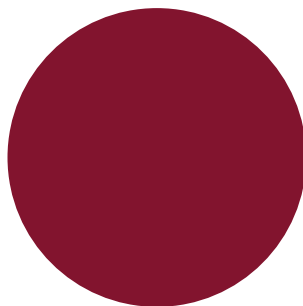
**Imbuusi**  
**Blue**



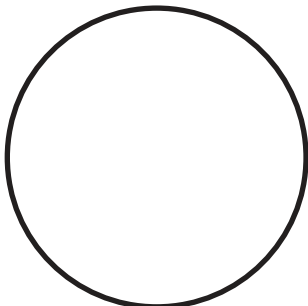
**Papo**  
**Purple**



**Ingoshakoshe**  
**Grey**



**Inandafu**  
**Maroon**



**Twanga**  
**White**

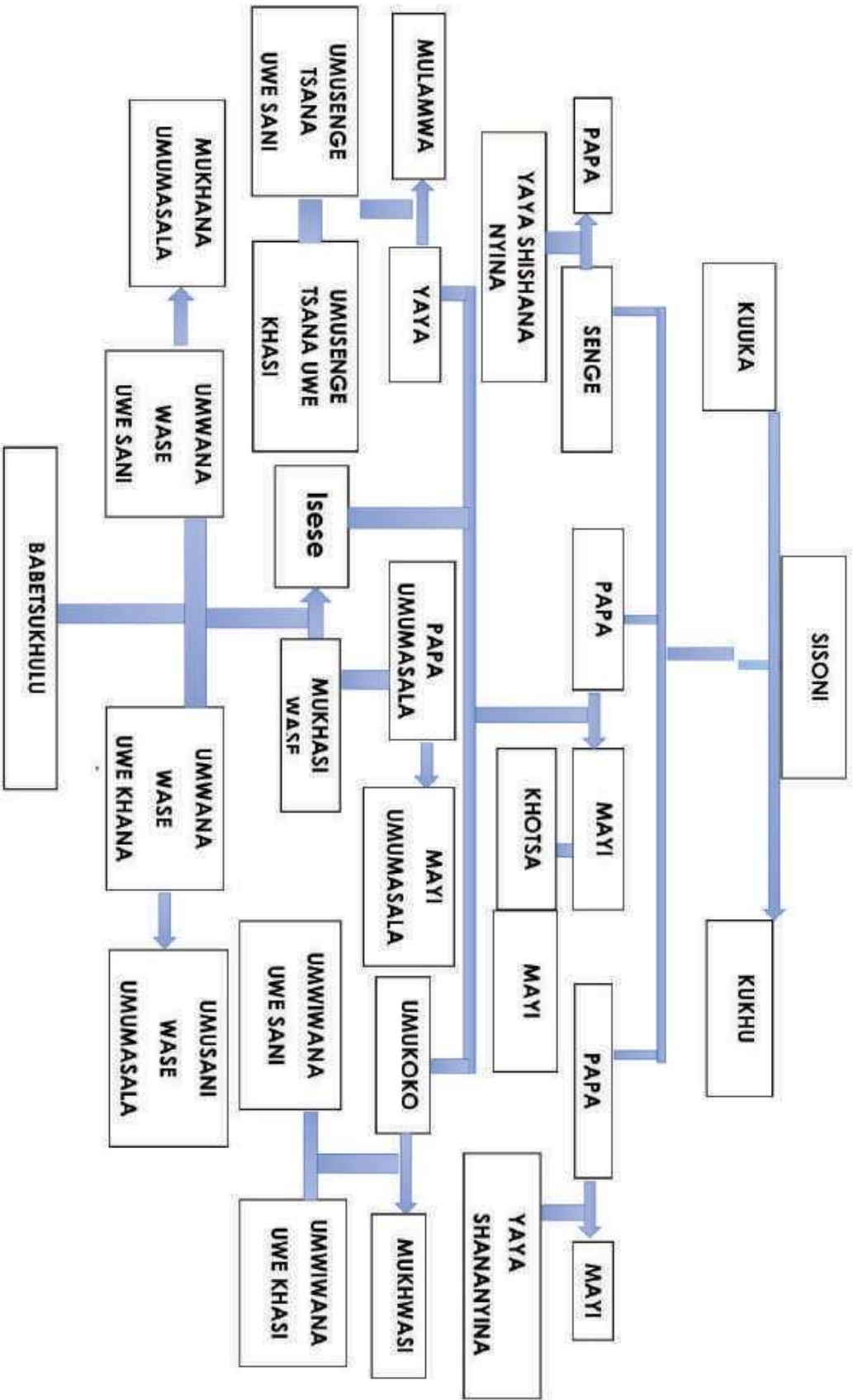
## 8. KAMADAALA KE BULEEBE BWASE

Sili sye kumukaso khu basomi khumanya khu kamadaala ke buleebe bwawe nio siyele basomi khusima khu baleebe bawe musisintsa syawe sisibibotookhelele. Kamadaala ke buleebe niko kakayeta khwafuna butwela mun'go , musisintsa, nikimisilo mu bwayo.

## 8. FAMILY TREE

Its important to learn about the family tree for learners to appreciate the relatives close to them in their environment. The family tree is the main source of social capital in our home, community culture and gender. The sustainability of family relationships depends on knowledge of the wider membership of the extended family. From the family tree learners may put actual names of real life situations to understand who is who in their family.

# KAMADAALA KE BULEEBE BWASE (MY FAMILY TREE)



## Very important actions and practices

With assistance from the teacher, help learners make the following using local materials?

- a) Kite
- b) A ball (**Kumupiira**)
- c) A bag (**Isawu**)
- d) A boat (**Lilyato**)
- e) A rope (**Kumukosi**)
- f) A pot (**Inyungu**)
- g) A mat (**Kumukhekha**)
- h) A dam (**Inyaantsa ikhupakamasanyalasi**)
- i) A broom (**Lulweyo / Isisyeyo**)
- j) A carpet (**Ikapeti**)
- k) A basket (**sisipo**)
- l) A shirt (**Isaati**)
- m) A blouse (**Ingubo syangaci**)
- n) A dress (**Siteteeyi**)
- o) A skirt (**Malinda**)