

Ubumenyi n'Ikoranabuhanga Riciriritse

Igitabo cy'Umwarimu

Umwaka wa

3

w' Amashuri Abanza

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INTANGIRIRO

Isomo ry'Ubumenyi n'Ikoranabuhanga Riciriritse ni umusingi utuma abaryiga bashobora kuziga neza siyansi mu bihe biri imbere, unabategura kujyana n'iterambere ryo mu bihe bizaza.

Ubumenyi n'Ikoranabuhanga Riciriritse bifasha umunyeshuri gutekereza byimbitse, gushyira mu gaciro, kugira umuco wo kuzigama, kwiteza imbere, kurangwa n'indangagaciro zihamye zifasha buri wese kubana n'abandi mu mahoro.

Ubumenyi n'Ikoranabuhanga Riciriritse ni inkingi fatizo mu iterambere ry'umuntu ku giti ke, umuryango n'Igihugu muri rusange.

a. Imiterere rusange y'iki gitabo

Iki gitabo cy'Ubumenyi n'Ikoranabuhanga Riciriritse cy'umwarimu kije gikurikira icy'umwaka wa kabiri. Gisobanura neza uko umwarimu akwiye kwigisha isomo ry'Ubumenyi n'Ikoranabuhanga Riciriritse. Kimwereka uko atanga inyigisho zishingiye ku bushobozi bw'umunyeshuri amuha uruhare runini mu myigire ye.

Iki gitabo kiyobora umwarimu mu kugeza abanyeshuri ku bumenyi, ubumenyingingiro n'ubukeshya buteganijwe. Gikubiyemo kandi uburyo bukoreshwa ngo bifashe umwarimu kugera ku ntego zisabwa.

Mu kurinda umwarimu guhuzagurika, iki gitabo kijyanye n'icy'umunyeshuri kigenda kimwereka neza aho ibyigwa biherereye mu gitabo cy'umunyeshuri, uko bitangwa, imyitozo ijyanye na byo n'ibisubizo byayo. By'umwihariko iki gitabo giha umwarimu uburyo bwo kwita ku banyeshuri be bose ntawe asize inyuma. Kirimo uburyo bwo yakoresha yigisha bujyanye n'integanyanyigisho ishingiye ku bushobozi bw'umunyeshuri.

b. Imitwe igize iki gitabo

Nk'uko igitabo cy'umunyeshuri kigizwe n'imitwe icumi (10) ni na ko iki gitabo kirimo imitwe icumi (10) igaragara mu mbonerahamwe ikurikira:

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c. Imiterere ya buri mutwe

Buri mutwe uri muri iki gitabo ugizwe n'ibi bikurikira:

- **Izina ry'umutwe**
- **Ubushobozi bw'ingenzi bugamijwe:** Bugaragaza icyo umunyeshuri azaba ashoboye gukora nyuma ya buri mutwe.
- **Intangiranwa:** Hagaragazwa ibyo umunyeshuri yize mu myaka ibanza cyangwa mu byigwa bya vuba bifitanye isano n'ikigwa agiye kwiga.
- **Ingingo nsanganyamasomo:** zitoranwa mu ngingo 8 z'ingenzi ari zo: Uburinganire, kwita ku bidukikije, umuco w'amahoro, umuco wo gukoresha ubyujije ubuziranenge, kurwanya jenocide n'ingengabitekerezo yayo, ubuzima bw'imyororokere, uburezi budaheza no gukoresha neza umutungo. Hakitabwa ku ngingo zifitanye isano n'umutwe runaka.
- **Ubushobozi umunyeshuri yunguka muri uyu mutwe**
Kuri buri mutwe hagaragazwa ubushobozi umunyeshuri yunguka butoranwa muri ubu bukurikira: Ubushakashatsi no kwikemurira ibibazo, ubushishozi, guhanga udushya, gushyikirana no gufatanywa n'abandi, gukoresha imvugo isobanutse, guhora yiyungura ubumenyi.
- **Inyunguramagambo**
Kuri buri mutwe hagaragazwa amagambo akoreshwa mu gusobanura no kumvikanisha ibikubiye mu byigwa biwugize.

- ***Uburyo bwo gusesengura ikibazo nyamukuru:***
Hatangizwa agakuru kagaragaza ikibazo uko giteye kandi gatera abanyeshuri amatsiko yo kumenya ibyo bagiye kwiga. Umwarimu asomesha ako gakuru, akabazaho n’ibibazo bijyanye. Umwarimu asobanurira abanyeshuri ko bazabona ibisubizo bifatika kuri icyo kibazo nyamukuru uko bazajya bagenda bacengerwa n’ubumenyi, ubumenyingingiro n’ubukesha bikubiye mu byigwa biri muri uwo mutwe.
- ***Uko umwarimu yita by’umwihariko ku bafite ibibazo byihariye yigisha buri mutwe***
 - Abafata bitinze abaha imyitozo ijyanye n’ubushobozi bwabo yateganyijwe kuri buri mutwe.
 - Abafite ubumuga bw’ingingo abanza kumenya izo ari zo akabategurira imfashanyigisho zihariye n’imyitozo yagera buri wese.
 - Abafite impano yo kumva no gukora vuba cyane abaha imyitozo y’inyongera asanga mu gitabo cy’umwarimu, ituma batarangaza abandi.
- ***Ibyigwa biri muri buri mutwe:***
Buri mutwe ufite imbonerahamwe igaragaza ibyigwa byose biwugize.
- ***Gusozwa umutwe***
Umutwe usozwa n’inshamake y’ibyzwemo, ubumenyi bw’inyongera umwarimu asabwa kugira, ibisubizo by’isuzuma risoza uwo mutwe, imyitozo y’umwihariko n’ibisubizo byayo bihabwa abanyeshuri bagenda buhoro mu myigire ndetse n’abihuta cyane kurusha abandi mu myigire yabo.

d. Imiterere ya buri kigwa

- Buri kigwa kiri muri iki gitabo giteye ku buryo bukurikira:
- ***Intego:*** zigaragaza ubumenyi, ubumenyingingiro n’ubukesha umunyeshuri asabwa kugeraho nyuma yo kwiga icyo kigwa.
 - ***Imyitozo y’isubiramo/Intangiriro:*** Imyitozo yo kwiyibutsa ijyanye n’ikigwa gishya cyangwa ibikorwa by’ivumburamatsiko ku kigwa gishya.
 - ***Imfashanyigisho:*** Buri kigwa kigira imfashanyigisho zihariye zifasha umunyeshuri kumva neza ibyo yiga azikoresha mu bikorwa binyuranye nko kwitegereza, gukorakora, kugereranya, gushushanya,...
 - ***Ibikorwa by’imyigire n’imyigishirize:*** Buri kigwa kigira uburyo bwihariye bwo kwigishya nko kwitegereza, gushakashaka kwigana, gukorakora, kujya impaka, gukorera mu matsinda, ...
 - ***Inshamake y’ibyzwe:*** Igaragaza mu magambo make ibikubiye muri buri somo
 - ***Isuzuma:*** Rikubiyemo ibibazo bisubizwa bavuga, bandika cyangwa bakora byaba umunyeshuri ku giti ke cyangwa mu matsinda.

- ***Ibsubizo by’imyitoto n’ibikorwa bijyanye na buri kigwa:*** Ku mpera ya buri kigwa hatangwa ibisubizo by’ibibazo n’ibikorwa byose byatanzwe mu gitabo cy’umunyeshuri kuri icyo kigwa.

e. Ubushobozi rusange bugamijwe mu isomo ry’Ubumenyi n’Ikoranabuhanga Riciriritse umwaka wa 3

Umunyeshuri urangije umwaka wa gatatu w’amashuri abanza agomba kugaragaza ubushobozi bukurikira:

- Gukora ibikinsho, ibikoresho by’ibanze n’imfashanyigisho (ikibindi imodoka mu mikwege, ibinyampande, igihanaguzo k’ikibaho, imfubikajosi, umusambi) no kubifata neza.
- Gukoresha terefone mu buzima busanzwe no mu ikoranabuhanga. (Guhamagara, kwitaba, kohereza no kwakira ubutumwa, kugura umuriro, kwishyura ifatabuguzi n’ibindi).
- Gukoresha mudasobwa XO kuri porogaramu zinyuranye, (“Typing Turtle, Write Activity” na “Record Activity.”)
- Gutunganya no kubika uko bikwiye amazi yo kunywa.
- Gutandukanya amoko y’ubutaka n’uburyo bwo kuburinda isuri.
- Gutandukanya amoko y’inyamaswa ushingiyeye ku rutirigongo.
- Kumenya isano iri hagati y’ingingo, imikaya n’amagufwa n’uko bifatwa neza.
- Gutandukanya amoko y’ingufu.
- Gutahura ibikoresho bikoresha amashanyarazi n’umumaro wayo.
- Gusobanura ibiranga rukuruzi no gutandukanya ibikururwa n’ibidakururwa na rukuruzi.

f. Uburyo bukoreshwa higishwa isomo ry’Ubumenyi n’Ikoranabuhanga Riciriritse

Abanyeshuri biga neza bagira uruhare runini mu myigire ku buryo bukurikira:

- Bitegereza banasesengura ibitekerezoshusho bikubiyemo ibyigwa biteganywa n’integanyanyigisho y’Ubumenyi n’Ikoranabuhanga Umwaka wa 3
- Bigana ibikorwa byerekanywe mu gitekerezoshusho.
- Bakora amagerageza agamije kuvumbura ibyigwa.
- Bakora ubushakashatsi bwifashisha ikoranabuhanga n’amasomero.
- Bakora imikoro n’imyitoto bigamije kurushaho kongera ubumenyi no kunoza ubushobozi bwa buri mwana.
- Imyitoto n’ibikorwa binyuranye bituma bitabira kuvumbura ibyo batari bazi, basoma ibitabo binyuranye, bashakisha amakuru anyuranye kugira ngo bashobore guhanga udushya.
- Imyitoto inyuranye n’ibikorwa bitandukanye, abanyeshuri bakorerera mu matsinda bibacengezemo umuco wo gukorera hamwe no gushyikirana n’abandi.

- Umunyeshuri agomba kugira uruhare runini mu myigire ye, kuko bituma ashakashaka, akitegereza, agakorakora, agahinduranya, akanavumbura akoresheje imfashanyigisho zitandukanye.

g. Ibyo umwarimu asabwa gukora igihe yigisha isomo ry'Ubumenyi n'Ikoranabuhanga Riciriritse

- Gushishikariza no kwemera gufata iyambere kw'abanyeshuri
- Gukoresha inyito nko gushyira mu matsinda, gusesengura, guteganya, no guhanga igihe cyo gukora ubishakashatsi
- Kureka ibisubizo by'abanyeshuri bikaba aribyo biyobora isomo, bikavanwamo uburyo bwo gukora no kuba byahindurwa ibyigwa.
- Kubanza kugira imyumvire y'uko abanyeshuri bumva ibintu mbere yo kubabwira uko we abyumva
- Gushishikariza abanyeshuri kwitabira ibiganiro hagati yabo n'umwarimu ndetse no hagati y'abanyeshuri ubwabo
- Gushishikariza abanyeshuri gushakashaka babaza ibibazo ndetse no kubazanya ibibazo hagati yabo
- Kugerageza guha umurongo ibisubizo by'abanyeshuri
- Gutuma abanyeshuri bagira uruhare mu kuganira amagerageza avuguruzanya n'ibisubizo batanze mbere
- Guha umwanya abanyeshuri wo gushakisha isano irihagati y'ibyo baba bari kuganiraho
- Guteza imbere amatsiko y'abanyeshuri

h. Ibyo umunyeshuri asabwa gukora mu isomo ry'Ubumenyi n'Ikoranabuhanga Riciriritse

- Kwitegereza, byaba ngombwa abanyeshuri bagakorakora imfashanyigisho zifatika
- Gukurikirana ibibazo abanyeshuri bagaragaje ko bafite kabone n'ubwo byaba byazanywe na mwarimu
- Kugira uruhare mugupanga ubushakashatsi hitawe kubisubizo bitegerejwe kuri ubwo bushakashatsi
- Guteza imbere ubumenyingiro bwo kwegeranya ibintu nyuma yo kukwitegereza, gupima cyangwa bivuye ahandi hantu byakoreshejwe
- Gukoresha no guteza imbere ubumenyingiro bwo gutunganya no gusesengura ibintu, gutekereza, kugerageza gutanga ibisobanuro hashingiwe kubyo batekereza cyangwa bageze ho.
- Gukorera hamwe n'abandi banyeshuri, gutangaza ibitekerezo byabo noguha agaciro ibitekerezo by'abandi
- Kwisobanura bakoresheje inyito nyazo zikoreshwa mubumenyi n'ibimenyetso bikoreshwa igihe cyo kwandika no gukora ibikorwa bitandukanye
- Kugira uruhare mubiganiro bya rusange igihe basobanura ibyo baba bakoze
- Gukoresha ibyo bize mubuzima busanzwe

- Kugira ubushobozi bwo kuba banenga ibyavuye mubushakashatsi bakoze

i. Uko isuzuma rikoresha n'ibigomba kwitabwaho

- Isuzuma rigomba gushingira ku bushobozi, umunyeshuri agakora umwitozo ujyanye n'ubuzima bwa buri muni ashira mu bikorwa ibyo yize .
- Isuzuma ryo kugorora imyigire n'imyigishirize hakoreshwa uburyo buziguye n'ubutaziguye hagamijwe gusuzuma ko abanyeshuri biga uko bikwiye.
- Ni ngombwa kugena ingingo ngenderwaho mu gusuzuma urwego rw'ubushobozi (ubumenyi, ubumenyingiro n'ubukeshya) abanyeshuri bategerejwe kugeraho muri buri somo.
- Ni ngombwa gusuzuma niba abanyeshuri bose bashoboye kugera uko bikwiye ku bushobozi bw'ingenzi bugamijwe nyuma ya buri mutwe uherye ku bigenderwaho mu isuzuma byateganyijwe mu ntangiro y'umutwe.
- Ni ngombwa gusuzuma uko abanyeshuri bagaragaza ubushobozi bukubiye mu byigwa ndetse n'ubushobozi n'ubumenyi ku ngingo nsanganyamasomo bakura mu isomo.
- Mu isuzuma ni byiza gukoresha impurirane y'uburyo bukurikira:
 1. *Kwitegereza*
 2. *Kwigana*
 3. *Gukorakora*
 4. *Ibibazo basubiza bandika*
 5. *Ibibazo basubiza bavuga*
 6. *Ibibazo basubiza bakorakora*
- Ni byiza kureba intera umunyeshuri agezeho nyuma y'igihembwe cyangwa nyuma y'umwaka ugamije gusuzuma ishusho y'ubushobozi umunyeshuri amaze kugeraho.
- Ni byiza gukoresha isuzuma rikomatanya ibyo umunyeshuri yize, hakarebwa niba agaragaza ubushobozi bugamijwe bwari buteganyijwe .
- Ni ngombwa kubika inyandiko zigaragaza umusaruro w'isuzuma habikwa ibyavuye mu isuzuma kugira ngo bizagufashe gutegura ibikorwa cyangwa ingamba zihariye zituma amasomo yumvikana kurushaho.
- Isuzuma ni ryo rigaragaza ko umunyeshuri yakurikiye neza mu ishuri mbere y'uko akora isuzuma risoza.
- Ibibazo by'isuzuma bigomba gutoza abanyeshuri gutekereza ku buryo bwimbitse, gushyira mu gaciro no gufata imyanzuro ihamye kandi ikwiye.
- Ibibazo by'isuzuma bigomba gutegurwa hashingiwe ku mibereho y'umunyeshuri kandi bifitanye isano n'ubuzima umunyeshuri abamo.
- Nyuma y'isuzuma ni ngombwa guha ababyeyi raporo y'intambwe abanyeshuri bagenda batera mu myigire yabo, ubereka uko bagaragaza ubushobozi bugamijwe n'aho bafite intege nke hakenewe gushyirwamo imbaraga.

IMBONERAHAMWE NKOMATANYAMASOMO

| | Umutwe wa 1: Ibikinisho, ibikoresho by'ibanze n'imfashanyigisho | Umutwe wa 2: Imikoreshereze ya terefoni | Umutwe wa 3: Inshuti yange mudasobwa |
|---|--|--|--|
| Umubare w'amasomo | 6 | 8 | 7 |
| Ubushobozi bw'ingenzi bugamijwe | Gukora ibikoresho n'imfashanyigisho mu ndodo, mu bitambaro, mu byatsi, mu birere, mu mpapuro, mu bikarito, mu mikwege no mu ibumba. | Gukoresha terefoni mu guhamagara, mu kohereza ubutumwa bugufi no mu ikoranabuhanga rusange. | Kunozza imyandikire muri "Typing activity" na "writing activity" no gufata amafoto n'amajwi muri "Record activity". |
| Umubare w'ibiyigwa | 10 | 15 | 11 |
| Imfashanyigisho | Inshinge, koroshi (yo kuboha), indodo (uruto n'urunini), ibitambaro, umukasi, urwembe, impapuro, ibirere, ibikarito, urukangaga, umugwegwe, ibumba, insibo, urujyo, amazi, imikwege, udusinga duto cyangwa imikoba, ibikoresho byo muri parasitike bishobora gutanga amapine, imifuniko y'amacupa. | Terefoni | XO Laptop |
| Ibikorwa by'imyigire n'imyigishirize | <ul style="list-style-type: none"> - Kwitegereza , - Kwigana, - Gukorera mu matsinda, - Gushakashaka, - Gukorakora , - Gusesengura, - Gutangaza no kumurika ibyo yagezeho cyangwa yakoze. | <ul style="list-style-type: none"> - Kwitegereza , - Kwigana, - Gukorera mu matsinda, - Gushakashaka, - Gukorakora , - Gusesengura, - Gutangaza no kumurika ibyo yagezeho cyangwa yakoze. | <ul style="list-style-type: none"> - Kwitegereza , - Kwigana, - Gukorera mu matsinda, - Gushakashaka, - Gukorakora , - Gusesengura, - Gutangaza no kumurika ibyo yagezeho cyangwa yakoze. |

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|--|--|--|---|
| Ubushobozi umunyeshuri yunguka mu isomo | <ul style="list-style-type: none"> - Ubushishozi no gushakashaka - Gukemura ibibazo bifitanye isano no kwikorera ibikoresho n'ibikinisho - Gushyikirana n'abandi - Guhora yiyungura ubumenyi - Gufatanya n'abandi - Kwihangira uturimo | <ul style="list-style-type: none"> - Ubushishozi no gushakashaka - Gukemura ibibazo bifitanye isano no gukoresha terefoni - Gushyikirana n'abandi - Guhora yiyungura ubumenyi - Gufatanya n'abandi - Gukoresha imvugo isobanutse - Kumenya kubara no gukoresha imibare | <ul style="list-style-type: none"> - Ubushishozi no gushakashaka - Gukemura ibibazo bifitanye isano no gukoresha mudasobwa ya XO - Gushyikirana n'abandi - Guhora yiyungura ubumenyi - Gufatanya n'abandi - Kwihangira uturimo |
| Ubumenyi ku ngingo nsanganya-masomo | <ul style="list-style-type: none"> - Gucunga umutungo - Umuco w'amahoro - Uburinganire n'ubwuzuzanye - Gufata neza ibidukikije - Uburezi budaheza - Umuco wo gukoresha ibyujuje ubuziranenge | <ul style="list-style-type: none"> - Gucunga umutungo - Umuco w'amahoro - Uburinganire n'ubwuzuzanye - Gufata neza ibidukikije - Uburezi budaheza - Umuco wo gukoresha ibyujuje ubuziranenge - Ubuzima bw'imyororokere - Kurwanya jenoside n'ingenga-bitekerezo yayo | <ul style="list-style-type: none"> - Gucunga umutungo - Umuco w'amahoro - Uburinganire n'ubwuzuzanye - Gufata neza ibidukikije - Uburezi budaheza - Umuco wo gukoresha ibyujuje ubuziranenge - Ubuzima bw'imyororokere |
| Ibigenderwaho mu isuzuma | <p>Ubushobozi bwo gukora igihanaguzo k'ikibaho, agatambaro ko mu ijosi, umusambi, uruhago n'ibinyampande (kare, urukiramende, na mpandeshatu), imodoka mu mikwege no kubumba akabindi.</p> | <p>Ubushobozi bwo gukoresha terefoni mu guhamagara, kohereza ubutumwa bugufi no mu rindi koranabuhanga.</p> | <p>Ubushobozi bwo kunoza imyandikire ukoresheje mudasobwa (XO laptop) no kunoza gufata amashusho n'amajwi hifashishijwe mudasobwa.</p> |

| | Umutwe wa 4: Amazi | Umutwe wa 5: Ubutaka | Umutwe wa 6: Inyamaswa |
|--|---|--|--|
| Umubare w'amasomo | 4 | 10 | 6 |
| Ubushobozi bw'ingenzi bugamijwe | Gushobora gutegura no kubika amazi yo kunywa | Gushobora gutandukanya amoko y'ubutaka, ay'isuri n'uburyo bwo kuyirinda ubutaka | Gutandukanya amoko y'inyamaswa ushingiyeye ku rutirigongo |
| Umubare w'ibygwa | 4 | 5 | 3 |
| Imfashanyigisho | Umuti wo gusukura amazi (urugero: Sur'EAU), isafuriya, imbabura n'amakara, ijerekani, icupa, ibikombe, akayunguruzo k'amazi, amazi, ikibiriti... | Amasuka , ibitiyo,ibyatsi byo gutera, ibyatsi by'isaso | Inka, intama, ihene, urukwavu, imbwa, ingurube, igishuhe, agacurama, imbeba, inkoko, umuserebanya, ifi, inzoka, isazi, uruyuki, umubu, ifuku, amashusho n'ibishushanyo biriho inyamaswa zidahita ziboneka. |
| Ibikorwa by'imyigire n'imyigishirize | <ul style="list-style-type: none"> - Kwitegereza, - Kwigana, - Gukorera mu matsinda, - Gushakashaka, - Gukorakora , - Gusesengura, - Gutangaza no kumurika ibyo yagezeho cyangwa yakoze - Gufata umugambi no kuwushyira mu bikorwa. | <ul style="list-style-type: none"> - Kwitegereza , - Kwigana, - Gukorera mu matsinda, - Gushakashaka, - Gukorakora , - Gusesengura, - Gutangaza no kumurika ibyo yagezeho cyangwa yakoze - Gufata umugambi no kuwushyira mu bikorwa. | <ul style="list-style-type: none"> - Kwitegereza, - Kwigana, - Gukorera mu matsinda, - Gushakashaka, - Gukorakora, - Gusesengura, - Gutangaza no kumurika ibyo yagezeho cyangwa yakoze - Gufata umugambi no kuwushyira mu bikorwa. |
| Ubushobozi umunyeshuri yunguka mu isomo | <ul style="list-style-type: none"> - Ubushishozi no gushakashaka - Gukemura ibibazo bifitanye isano no gutegura amazi yo kunywa no kuyabika - Gushyikirana n'abandi - Guhora yiyungura ubumenyi - Gufatany n'abandi - Gukoresha invugo isobanutse | <ul style="list-style-type: none"> - Ubushishozi no gushakashaka - Gukemura ibibazo bifitanye isano no kurwanya isuri - Gushyikirana n'abandi - Guhora yiyungura ubumenyi - Gufatany n'abandi | <ul style="list-style-type: none"> - Ubushishozi no gushakashaka - Gukemura ibibazo bifitanye isano no kwirinda inyamaswa - Gushyikirana n'abandi - Guhora yiyungura ubumenyi - Gufatany n'abandi |

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| Ubumenyi ku ngingo nsanganya-masomo | <ul style="list-style-type: none"> - Umuco w'amahoro - Gucunga umutungo - Uburinganire n'ubwuzuzanye - Gufata neza ibidukikije - Umuco wo gukoresha ibyujije ubuziranenge | <ul style="list-style-type: none"> - Gucunga umutungo - Uburinganire n'ubwuzuzanye - Gufata neza ibidukikije - Uburezi budaheza | <ul style="list-style-type: none"> - Gufata neza ibidukikije |
| Ibigenderwaho mu isuzuma | Ubushobozi bwo gutegura no kubika amazi yo kunywa (bayatse cyangwa bashyizemo umuti usukura amazi). | Ubushobozi bwo gutandukanya amoko y'isuri no gusobanura uburyo bwo kuyirinda | Ubushobozi bwo gutandukanya amoko y'inymaswa ushingiyeye ku rutirigongo |

| | Umutwe wa 7: Imikaya n'amagufwa | Umutwe wa 8: Amoko y'ingufu |
|---|--|---|
| Umubare w'amasomo | 8 | 10 |
| Ubushobozi bw'ingenzi bugamijwe | Gusobanura isano iri hagati y'ingingo, imikaya n'amagufwa n'uko bifatwa neza | Gusobanura amoko atandukanye y'ingufu |
| Umubare w'ibyigwa | 9 | 10 |
| Imfashanyigisho | Ibishushanyo by'imikaya n'amagufwa by'umubiri w'umuntu | Indangururamajwi nini, ikintu kiremereye cyo guterura, impapuro, amababi mabisi, isitimu, ibyuma bikoze mu rutare, rukuruzi, ikibiriti. |
| Ibikorwa by'imyigire n'imyigishirize | <ul style="list-style-type: none"> - Kwitegereza, - Kwigana, - Gukorera mu matsinda, - Gushakashaka, - Gukorakora, - Gusesengura, - Gutangaza no kumurika ibyo yagezeho cyangwa yakoze - Gufata umugambi no kuwushyira mu bikorwa. | <ul style="list-style-type: none"> - Kwitegereza , - Kwigana, - Gukorera mu matsinda, - Gushakashaka, - Gukorakora, - Gusesengura, - Gutangaza no kumurika ibyo yagezeho cyangwa yakoze - Gufata umugambi no kuwushyira mu bikorwa. |

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|--|---|---|
| Ubushobozi umunyeshuri yunguka mu isomo | <ul style="list-style-type: none"> - Ubushishozi no gushakashaka - Gukemura ibibazo bifitanye isano no gufata neza imikaya n'amagufwa - Gushyikirana n'abandi - Guhora yiyungura ubumenyi - Gufatanya n'abandi | <ul style="list-style-type: none"> - Ubushishozi no gushakashaka - Gukemura ibibazo bifitanye isano n'amoko atandukanye y'ingufu - Gushyikirana n'abandi - Guhora yiyungura ubumenyi - Gufatanya n'abandi - Gukoresha imvugo isobanutse |
| Ubumenyi ku ngingo nsanganyamasomo | <ul style="list-style-type: none"> - Gucunga umutungo - Uburinganire n'ubwuzuzanye - Umuco wo gukoresha ibyuje ubuziranenge | <ul style="list-style-type: none"> - Gucunga umutungo - Umuco wo gukoresha ibyuje ubuziranenge - Gufata neza ibidukikije |
| Ibigenderwaho mu isuzuma | Ubushobozi bwo gusobanura isano iri hagati y'ingingo, imikaya n'amagufwa n'uko bifatwa neza. | Ubushobozi bwo kurondora amoko y'ingufu zitandukanye n'ingero z'aho zikoreshwa. |

| | Umutwe wa 9: Amashanyarazi | Umutwe wa 10: Rukuruzi |
|--|--|--|
| Umubare w'amasomo | 5 | 6 |
| Ubushobozi bw'ingenzi bugamijwe | Gushobora gutahura ibikoresho bikoresha amashanyarazi n'umumaro wayo. | Gusobanura ibiranga rukuruzi; gutandukanya ibikururwa n'ibidakururwa na rukuruzi. |
| Umubare w'ibyigwa | 1 | 1 |
| Imfashanyigisho | Ibikoresho bikoresha amashanyarazi: Mudasobwa, terefone, ipasi, firigo, itoroshi, iziko rikoresha amashanyarazi, icyuma gishyushya mu nzu, tereviziyo, radiyo. | Rukuruzi, ibikoresho bitandukanye (ibikoze mu giti, ibikoze muri parasitike, ibikoze mu birahure, ibikoze mu mabuye n'ibikoze mu cyuma), utwuma dufungura amavisi, urupapuro, ikirahure, urubaho, purasitike, igiceri cya 100, urugi rukoze mu cyuma, icyuma k'ingunguru, utwuma dufata impapuro, amakarita ya banki cyangwa indangamuntu, indangururamajwi nini, kasete za radiyo cyangwa za videwo, compact disk (CD), flash disk. |

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|--|---|--|
| Ibikorwa by'imyigire n'imyigishirize | <ul style="list-style-type: none"> - Kwitegereza, - Kwigana, - Gukorera mu matsinda, - Gushakashaka, - Gukorakora, - Gusesengura, - Gutangaza no kumurika ibyo yagezeho yangwa yakoze - Gufata umugambi no kuwushyira mu bikorwa. | <ul style="list-style-type: none"> - Kwitegereza , - Kwigana, - Gukorera mu matsinda, - Gushakashaka, - Gukorakora , - Gusesengura, - Gutangaza no kumurika ibyo yagezeho cyangwa yakoze - Gufata umugambi no kuwushyira mu bikorwa. |
| Ubushobozi umunyeshuri yunguka mu isomo | <ul style="list-style-type: none"> - Ubushishozi no gushakashaka - Gukemura ibibazo bifatanye isano n'ibikoresho bikoresha amashanyarazi - Gushyikirana n'abandi - Guhora yiyungura ubumenyi - Gufatany n'abandi - Gukoresha imvugo isobanutse | <ul style="list-style-type: none"> - Ubushishozi no gushakashaka - Gukemura ibibazo bifatanye isano na rukuruzi - Gushyikirana n'abandi - Guhora yiyungura ubumenyi - Gufatany n'abandi - Gukoresha imvugo isobanutse |
| Ubumenyi ku ngingo nsanganyamasomo | <ul style="list-style-type: none"> - Gucunga umutungo - Umuco wo gukoresha ibyujije ubuziranenge - Gufata neza ibidukikije | <ul style="list-style-type: none"> - Gucunga umutungo - Umuco wo gukoresha byujije ubuziranenge - Gufata neza ibidukikije |
| Ibigenderwaho mu isuzuma | Ubushobozi bwo gucomeka no gucana neza ibikoresho bitandukanye bikoresha amashanyarazi. | Ubushobozi bwo gutahura ingufu za rukuruzi, ibiziranga no kuvumbura ibikururwa n'ibidakururwa na zo. |

IMBATA Y'ISOMO RISHINGIYE KU BUSHOBOZI

| Igihembwe | Itariki | Inyigisho | Umwaka wa | Umutwe wa | Isomo rya | Igihe isomo rimara | Umubare w'abanyeshuri |
|---|--|---------------------------------------|--|-----------|-----------|--------------------|-----------------------|
| 1 | 22/1/2018 | Ubumenyi n'Ikoranabuhanga Riciriritse | Gatatu | Mbere | 1 kuri 7 | Iminota 40 | 45 |
| Abafite ibyo bagenerwa byihariye mu myigire no mu myigishirize n'umubare wabo | | | | | | | |
| Umutwe | | | | | | | |
| Ubushobozi bw'ingenzi bugamijwe | | | | | | | |
| Isomo | | | | | | | |
| Intego ngenamukoro | | | | | | | |
| Imiterere y'aho isomo ribera | | | | | | | |
| Imfashanyigisho | | | | | | | |
| Inyandiko n'ibitabo byifashishijwe | | | | | | | |
| Ibice by'isomo + Igihe | Inshamake y'ibikorwa by'umwarimu n'iby'umunyeshuri: <ul style="list-style-type: none"> - Guha abanyeshuri imfashanyigisho zose baza gukenera bokora igihanaguzo. - Gukora igihanaguzo abanyeshuri bitegereza uko ugikora. - Gushyira abanyeshuri no kugenzura ibikorwa byose bikorerwa mu matsinda. - Abanyeshuri bakora igihanaguzo bigana | | Ubushobozi n'ingingo nsanganyamasomo (Andika ubushobozi + igisobanuro kigufi kibigaragaza) | | | | |

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| <p>Intangiriro Iminota 5</p> | <p>Ibikorwa by'umwarimu</p> <ul style="list-style-type: none"> - Kubaza ibibazo biyanyane n'ibyo wakoramo ibihanaguzo n'akamaro ko kwikorera ibihanaguzo <p>Urugero:</p> <ol style="list-style-type: none"> 1) Kugira ngo usukure ikibaho ukoresha iki? 2) Ibihanaguzo mubona mu ishuri ryanyu bikoze mu ki? | <p>Ibikorwa by'umunyeshuri</p> <ul style="list-style-type: none"> - Gusubiza ibibazo biyanyane no gusobanura ibikoresheya mu gukora igihanaguzo n'akamaro kacyo <p>Ibisubizo bishoboka:</p> <ol style="list-style-type: none"> 1) Mu gusukura ikibaho dukoresheya ibihanaguzo, amazi, ... 2) Hari ibihanaguzo bikoze mu dutambaro, mu budodo, mu ifufuma, ... | <p>I. Ubushobozi</p> <ul style="list-style-type: none"> - Kwitegereza ibyo areba. - Gushyikirana n'abandi igihe akorera mu matsinda cyangwa afatanyaga n'abandi - Gutekereza ku byo asabwa gukora, bityo akabikora neza atibeshya. - Gukoresha imvugo isobanutse igihe asobanura ibyo yakoze |
| <p>Isomo nyirizina Iminota 30</p> | <p>Igikorwa cya 1</p> <ul style="list-style-type: none"> - Gufata ibitambaro, urushinge rudoda, urudodo n'umukasi ukerekera abanyeshuri uko bakora igihanaguzo mu bitambaro no gusobanura intambwe zose zikurikizwa mu ikorwa ry'igihanaguzo. <p>Igikorwa cya 2</p> <ul style="list-style-type: none"> - Gushyira abanyeshuri mu matsinda no kubaha ibikoreshe byose baza gukenera nk'ibitambaro, inshinge zidoda, indodo n'imikasi. - Kweruka abanyeshuri amashusho agaragaza intambwe zo gukora igihanaguzo mu bitambaro - Gusobanurira abanyeshuri igikorwa bagiyeye gukora uburyo kiri bukorwe. | <p>Igikorwa cya 1</p> <ul style="list-style-type: none"> - Kwitegereza uko umwarimu akora igihanaguzo no kubaza umwarimu intambwe atasobanukiwe neza uko ikorwa. <p>Igikorwa cya 2</p> <ul style="list-style-type: none"> - Kwakira ibikoreshe ari bukenere - Kwitegereza amashusho agaragaza intambwe zikurikizwa mu ikorwa ry'igihanaguzo mu bitambaro - Gukora igihanaguzo mu bitambaro yigana uko umwarimu yagikoze ndetse n'intambwe zigaragaza uko bakora igihanaguzo mu bitambaro yitegereje ku mashusho. | |

| | | | |
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| | <p>- Kuyobora igikorwa cyo kumurika ibihanaguzo byakorewe mu matsinda, kwereka buri tsinda intambwe yo gukora igihanaguzo, iritakoze neza akarisobanurira uko ryagombaga kubikora.</p> <p>- Gushima itsinda ryakoze igihanaguzo kiza no kugira inama abatabikoze neza.</p> <p>Igikorwa cya 3</p> <p>- Kubwira buri munyeshuri agafata ibikoresho byifashishwa hakorwa igihanaguzo yazanye nk' ibitambaro, inshinge zidoda, indodo n' imikasi.</p> <p>- Gusaba buri wese gukora igihanaguzo akurikiza uko wabikoze, ibyo yitegereje ku mashusho, uko byakozwe mu itsinda yari arimo ndetse n' inama itsinda rye ryagiriwe n' umwarimu.</p> <p>- Kugenzura ko buri wese akora neza igihanaguzo nk' uko yabisabwe.</p> <p>- Gusaba buri wese kumurika igihanaguzo yakoze, kugenzura buri gihanaguzo no kugira inama uwagikoze.</p> | <p>- Kumurika igihanaguzo cyakozwe n' itsinda rye, gutega amatwi inama z' umwarimu ndetse no kugereranya igihanaguzo k' itsinda rye n' ibindi by'andi matsinda.</p> <p>- Kumva inama z' umwarimu no kwikosora .</p> <p>Igikorwa cya 3</p> <p>- Gufata ibikoresho byifashishwa hakorwa igihanaguzo mu bitambaro yazanye.</p> <p>- Gukora igihanaguzo mu bitambaro akurikiza uko umwarimu we yabikoze, ibyo yitegereje ku mashusho, uko byakozwe mu itsinda yari arimo ndetse n' inama itsinda rye ryagiriwe n' umwarimu.</p> <p>- Gukurikiza amabwiriza yahawe agakora igihanaguzo</p> <p>- Kumurikira abanyeshuri bagenzi be igihanaguzo yakoze.</p> | <p>- Guhanga udushya mu gihe akora igihanaguzo</p> <p>- Kugira amashyushyu yo guhura yiyungura ubumenyi</p> <p>- Kwikemurira ibibazo mu gihe yikorera igihanaguzo</p> <p>- Kwihangira imirimo mu gihe ashobora gukora ibihanaguzo byo kugurisha</p> <p>2. Ingingo nsanganyamasomo</p> <p>- Ubwuzanywe bw'ibitsina byombi mu gukora ibikorwa nta vangura.</p> <p>- Uburezi budahaze mu gihe abafite ubumuga bigana kandi bagafashanya n' abatabufite nta kibazo.</p> <p>- Gufata neza ibidukikije mu gihe asukura aho akorera cyangwa afata neza imfashanyigisho yakoresheje.</p> |
|--|--|---|--|

| | | | |
|---|--|--|---|
| | <p>- Guha abanyeshuri igikorwa cyo guhanagura ikibaho bakoresheje ibihanaguzo bakoze no kubasobanira ko bahanagura bahereye hejuru bajyana hasi.</p> <p>- Gushima abakoze ibihanaguzo byiza ndetse n' abahanaguye ikibaho neza no gushishikariza abatagikoze neza kuza kubikomereza mu rugo.</p> | <p>- Guhanaguzo ikibaho igihanaguzo yikoreye ahanagura ahereye hejuru amanura hasi.</p> <p>- Kumva inama z' umwarimu no kuzishyira mu bikorwa.</p> | <p>- Umuco w' amahoro mu gihe akorana na bagenzi be mu bwumvikane ntawe abangamiye</p> <p>- Umuco wo gukoresha neza umutungo igihe agaragaza inshingano ze mu gukora ibihanaguzo bikomeye kandi nta kintu yangijije</p> |
| <p>Umusozo w' isomo: Ikomatanywa Iminota 5</p> <p>Isuzuma Iminota 5</p> | <p>- Gusaba abanyeshuri bakavuga intambwe zikurikizwa hakorwa igihanaguzo k' ikibaho mu bitambaro.</p> <p>- Kubwira buri munyeshuri uvuze imwe muri izo ntambwe akayandika ku kibaho.</p> <p>- Kubwira abanyeshuri bagasiba za ntambwe banditse ku kibaho bakoresheje ibihanaguzo bakoze.</p> <p>- Abatashoboye kurangiza gukora igihanaguzo basabe kugikomereza mu rugo maze bazakikwereke ry' ubutaha.</p> <p>- Abakoze igihanaguzo kiza bahe umukoro wo gukora ikindi gihanaguzo kiza kurusha icyo bakoze</p> | <p>- Kurondora intambwe zikurikizwa hakorwa igihanaguzo k' ikibaho mu bitambaro.</p> <p>- Kwandika ku kibaho intambwe avuze</p> <p>- Gusiba intambwe zose zanditswe ku kibaho.</p> <p>- Igihe na we atashoboye kurangiza gukora igihanaguzo ke agomba kugikomereza mu rugo akazakimurika mbere y' isomo ry' ubutaha.</p> <p>- Mu gihe yakoze igihanaguzo kiza na we atahana umukoro wo gukora ikindi gihanaguzo kiza kurusha icyo yakoze</p> | <p>- Umuco wo gukoresha ibyujije ubuziranenge mu gihe akora igihanaguzo kitangiza ikibaho cyangwa ngo gihumanye ugikoresha</p> |
| <p>Kwisuzuma (Umurezi)</p> | <p>Nshingiyeye ku bikorwa by' abanyeshuri n' isuzuma nabakoreye ndagenzura ndebe ko isomo ryagenze neza cyangwa nabi. Ndafata ingamba zijyanye n' uko isomo ryagenze. Ndashima abanyeshuri bange mu rwego rwo kubashishikariza kugira ishyamba no kwiga babikunze.</p> | | |

UMUTWE WA MBERE: IBIKINISHO, IBIKORESHO BY'IBANZE N'IMFASHANYIGISHO

(Urupapuro rwa 1 – 20 mu gitabo cy'umunyeshuri)

1.1 Ubushobozi bw'ingenzi bugamijwe

Gukora ibikinisho/ ibikoresho/ imfashanyigisho mu ndodo, mu bitambaro, mu byatsi, mu birere, mu mpapuro, mu bikarito, mu mikwege no mu ibumba

1.2 Ibyizwe mbere bifitanye isano n'uyu mutwe

Gukora agakinisho kaguruka budege mu mpapuro, mu duti no muri parasitiki

1.3 Ubumenyi ku ngingo nsanganyamasomo buri muri uyu mutwe n'uko bugerwaho

- **Ubwuzuzanye bw'ibitsina byombi** mu gukora ibikinisho, ibikoresho by'ibanze n'imfashanyigisho nta vangura rishingiye ku gitsina .
- **Uburezi budahazeza** mu gihe abafite ubumuga cyangwa ibindi bibazo byihariye bigana n'abatabifite nta mbogamizi bose bagize.
- **Gufata neza ibidukikije** mu gihe asukura aho akorera kandi agashaka imfashanyigisho nta kintu yangije.
- **Umuco w'amahoro** mu gihe akorana na bagenzi be mu bwumvikane nta we abangamiye.
- **Umuco wo gukoresha neza umutungo** igihe afata neza imfashanyigisho n'ibikinisho kandi agakora ibiramba .
- **Kugira umuco wo gukoresha ibyujije ubuziranenge** mu gihe akoresha ibifite ubuziranenge bitamwangiza kandi avanamo ibintu bikomeye: indodo zitashaje, udutambaro tutaboze cyangwa ngo tube twuzuye umwanda, ibirere byumutse neza kandi bifite isuku, ubwatsi butariho isayo, inshinge zidafite umugese , amazi meza yo kubohesha, umukasi utamukomeretsa intoki, urwembe rushyashya, insibo itarimo ibintu bishobora gukomeretsa n'ibindi.

1.4 Ubushobozi umunyeshuri azunguka muri uyu mutwe

- Gutekereza byimbitse no gushakashaka ngo akore ibikinisho, ibikoresho by'ibanze n'imfashanyigisho.
- **Kwitegerezanya ubushishozi** agasobanura ibyo yitegereje
- **Gushyikirana n'abandi** igihe akorera mu matsinda cyangwa afatany n'abandi
- **Guhanga udushya** mu gihe akora ibikinisho n'imfashanyigisho ku buryo yitekerereje kandi bubereye ijisho
- **Kwikemurira ibibazo** mu gihe yikorera ibikinisho n'imfashanyigisho

1.5. Amagambo umunyeshuri yunguka muri uyu mutwe

Guca ubwatsi: Kubutema mu gishanga

Gukegeta: Gukata umusambi hejuru y'umusozo umaze kuwusoza neza

Gutondera: Gutangira kuboha umusambi cyangwa uruhago

Ibikoresho: Ibyo umuntu yifashisha mu gukora igikorwa runaka

Ibikoreshwa: Ibyo umuntu aheraho akora igikoresho runaka

Ibumba rihye: Ibumba bakase rikaba rinoze rigeze igihe cyo gutangira gukoreshwa babumba

Imboho bufuro: Imboho igiye igira udupfundo

Imboho nzirimwe: Imboho ikoze nk'umukufi ugiye umujyo umwe

Inganzo: Aho bakura ibumba

Ingenge / Injishi: Umwanya uri hagati y'imihoro ibiri yo mu musambi

Inkogoto: Agakoresho bakoresha basena icyo barimo kubumba

Inshunda: Utuntu turereta bashyira ku mitwe y'imfubikajosi

Insibo: Ubwoko by'umucanga bavanga mu ibumba ngo rikomere

1.6 Ikibazo nyamukuru

- Umwarimu asomesha agakuru kajyanye n'ikibazo cy'abana bahanaguza ikibaho intoki ntibagire n'ikintu cyo kwifubika mu ijosi iyo hakonje.
- Asaba abanyeshuri kukaganiraho no kugatangaho ibitekerezo bagaragaza uko bafasha abo bana kwikemurira ibyo bibazo.
- Abasobanurira ko ibisubizo nyabyo bazajya babibona mu masomo bagiye kwiga muri uyu mutwe.

1.7 Uko umwarimu yita by'umwihariko ku bafite ibibazo byihariye yigisha uyu mutwe

- Abagenda buhoro mu myigire yabo bahe ibikorwa byabateganyirijwe usanga muri iki gitabo.
- Abafite ubumuga bw'ingingo banza umenye izo ari zo ubategurire imfashanyigisho zihariye n'imyitozo wagenera buri wese.
- Abafite impano yo kumva no gukora vuba cyane bahe ibikorwa bituma bacukumbura ikigwa usanga muri iki gitabo.

1.8 Ibyigwa biri muri uyu mutwe wa 1

| | Urutonde rw'ibygwa | Umubare w'amasomo (periods): 6 |
|---|--|--------------------------------|
| 1 | Gukora igihanaguzo k'ikibaho mu bitambaro | 1 |
| 2 | Kuboha imfubikajosi mu mboho bufuro no mu mboho nzirimwe | 1 |

| | | |
|---|---|---|
| 3 | Kuboha umusambi mu bwatsi no kuboha imvumba mu birere | 1 |
| 4 | Gokora ibinyampande mu mpapuro cyangwa mu bikarito | 1 |
| 5 | Kubumba ikibindi mu ibumba no gukora imodoka mu mikwege | 1 |
| 6 | Isuzuma risoza umutwe | 1 |

1.9 Imyigishirize ya buri somo

1.9.1 Isomo rya 1: Gukora igihanaguzo k'ikibaho mu bitambaro

a. Intego

Ubumenyi:

Kumenya gusobanura uko igihanaguzo k'ikibaho gikorwa

Ubumenyigiro:

Kwikorera igihanaguzo k'ikibaho

Ubukeshya:

- Kwitondera ibikoresho bishobora gukomeretsa
- Gufata neza ibikoresho
- Kugira umuco wo gukora ibibereye ijisho

b. Intangiriro

Kwitegereza amashusho agaragaza uko bakora igihanaguzo no kuyaganiraho

c. Imfashanyigisho

Udutambaro, indodo, inshinge zidoda, umukasi, urwembe.

d. Ibikorwa by'imyigire n'imyigishirize

- Gutegura imfashanyigisho zihagije zituma umunyeshuri amenya uko bakora igihanaguzo k'ikibaho mu bitambaro.
- Guha abanyeshuri amabwiriza akwiye gukurikizwa igihe bakora ibikorwa byo kwitegereza, kwigana no gukora igihanaguzo.
- Azenguruka hose agenzura ko babikora uko bikwiye.
- Guha buri munyeshuri umwanya wo gukosora ibyo atakoze neza.
- Kuyobora abanyeshuri mu bikorwa byo kubwira no kumurikira abandi ibyo bakoze.
- Abafite ibyo bagenerwa byihariye mu myigire yabo; ababa hafi kandi akabaha gukora ibikorwa bafitiye ubushobozi.

Urugero: Hari abafite ubumuga bw'ingingo bashobora gukoresha amaguru, umunwa,...

- Aha ibitsina byombi uburenganzira bungana mu gukora ibikorwa bitandukanye bicengeza isomo ryizwe, abakobwa n'abahungu bose bagakora.
- Yunganira abafite ibibazo mu gukora igihanaguzo uko babisabwe ku buryo buri wese abyikorera neza kandi yihuse.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. **Urugero:** Ubigenza ute iyo ukora igihanaguzo k'ikibaho mu bitambaro? Iyo ukora igihanaguzo k'ikibaho ukurikiza intambwe zikurikira:

- Gushyira urudodo mu rushinge
- Guhina agatambaro mo kabiri
- Guteranya ugakora agafuka
- Gutsindagira udutambaro mu gafuka
- Gufunga hejuru ugasozza igihanaguzo cyawe
- Guhanagura ikibaho

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy'umunyeshuri byo gukora igihanaguzo.

g. Ibisubizo by'umwitozo wo kuri iki kigwa, uri ku rupapuro rwa 2 mu gitabo cy'umunyeshuri

Iyo ukora igihanaguzo k'ikibaho ukurikiza intambwe zikurikira:

- Gushyira urudodo mu rushinge
- Guhina agatambaro mo kabiri
- Guteranya ugakora agafuka
- Gutsindagira udutambaro mu gafuka
- Gufunga hejuru ugasozza igihanaguzo cyawe
- Guhanagura ikibaho

1.9.2 Isomo rya 2: Ibohwa ry'imfubikajosi mu mboho bufuro

a. Intego

Ubumenyi:

Gusobanura uko baboha imfubikajosi mu mboho bufuro.

Ubumenyingingiro:

Kwibohera imfubikajosi no kwerekana uko ibohwa .

Ubukeshya:

- Kwitondera ibikoresho bishobora gukomeretsa.
- Gufata neza ibikoresho.
- Kugira umuco wo gukunda ibibereye ijisho.

b. Intangiriro

Kwitegereza amashusho agaragaza uko baboha imfubikajosi no kuyaganiraho.

c. Imfashanyigisho

Ubudodo inshinge ziboha, koroshi, umukasi, urwembe.

d. Ibikorwa by'imyigire n'imyigishirize

- Umwarimu ategura imfashanyigisho zihagije zituma umunyeshuri amenya uko baboha imfubikajosi mu mboho bufuro.
- Guha abanyeshuri amabwiriza akwiye gukurikizwa igihe bakora ibikorwa byo kwitegereza no kwigana uko baboha imfubikajosi.
- Umwarimu yereka abanyeshuri uko batangira kuboha.
- Azenguruka hose agenzura ko baboha badasobanya.
- Ayobora abanyeshuri mu bikorwa byo kubwira abandi no kubamurikira ibyo bakoze .
- Aha buri munyeshuri umwanya wo gukosora aho ataboshye neza.
- Abafite ibyo bagenerwa byihariye mu myigire yabo; ababa hafi kandi akabaha gukora ibikorwa bafitiye ubushobozi.

Ingero: Kubohera ku gatanda, kubohera umunwa

- Aha ibitsina byombi uburenganzira bungana mu gukora ibikorwa bitandukanye bicengeza isomo ryizwe bose bakaboha.
- Yunganira abafite ibibazo mu gukora imfubikajosi uko babisabwe ku buryo buri wese abyikorera neza kandi yihuse.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. **Urugero:** Ubigenza ute iyo uboha imfubikajosi mu mboho bufuro?

Iyo uboha imfubikajosi mu mboho bufuro ukurikiza intambwe zikurikira:

- Gukora ipfundo rinyererera
- Gukora amano atarenga 50
- Kuboha impindure n'impindurize
- Gusozwa
- Guhina, gukata inshunda no kuzishyiraho
- Kuringaniza inshunda
- Kwambara imfubikajosi wakoze

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy'umunyeshuri ku kwibohera imfubikajosi mu mboho bufuro

g. Ibisubizo by'umwitozo wo kuri iki kigwa, uri ku rupapuro rwa 4 mu gitabo cy'umunyeshuri

Inshinge, ubudodo, umukasi n'ikoroshi

1.9.3 Isomo rya 3: Ibohwa ry'imfubikajosi mu mboho nzirimwe

a. Intego

Ubumenyi:

Gusobanura uko baboha imfubikajosi mu mboho nzirimwe

Ubumenyigiro:

Kwibohera imfubikajosi no kwerekana uko ibohwa .

Ubukeshya:

- Kwitondera ibikoresho bishobora gukomeretsa .
- Gufata neza ibikoresho.
- Kugira umuco wo gukunda ibibereye ijisho.

b. Intangiriro

Kwitegereza amashusho agaragaza uko baboha imfubikajosi no kuyaganiraho.

c. Imfashanyigisho

Ubudodo inshinge ziboha, koroshi, umukasi, urwembe.

d. Ibikorwa by'imyigire n'imyigishirize

- Umwarimu ategura imfashanyigisho zihagije zituma umunyeshuri amenya uko baboha imfubikajosi mu mboho nzirimwe.
- Asaba abanyeshuri kwitegereza amashusho agaragaza uko baboha imfubikajosi mu mboho nzirimwe.
- Aha abanyeshuri amabwiriza akwiye gukurikizwa igihe bakora ibikorwa byo kwitegereza no kwigana uko baboha imfubikajosi
- Umwarimu yereka abanyeshuri uko baboha imfubikajosi mu mboho nzirimwe na bo bakabikurikiza.
- Abanyeshuri bigana uko baboha imfubikajosi mu mboho nzirimwe bakurikiza ibyiciro byerekanwe ku mashusho n'uko umwarimu yabikoze.
- Umwarimu azenguruka hose azenzura ko babikora uko bikwiye
- Ayobora abanyeshuri mu bikorwa byo kubwira abandi no kubamurikira ibyo bakoze.
- Aha buri munyeshuri umwanya wo gukosora ibyo atabashije gukora neza.
- Abafite ibyo bagenerwa byihariye mu myigire yabo; ababa hafi kandi akabaha gukora ibikorwa bafiteye ubushobozi. **Urugero:** Kubohesha agatanda, umunwa cyangwa amano
- Aha ibitsina byombi uburenganzira bungana mu gukora ibikorwa bitandukanye bicengeza isomo ryizwe bose bakaboha.
- Yunganira abafite ibibazo mu gukora imfubikajosi uko babisabwe ku buryo buri wese abyikorera neza kandi yihuse.

- Umwarimu yereka abanyeshuri uko batondera n'uko batangira kuboha umusambi na bo bakabikurikiza.
 - Azenguruka hose agenzura ko babikora uko bikwiye
 - Aha buri munyeshuri umwanya wo gukosora iyo atabashije gukora neza ku giti ke.
 - Ayobora abanyeshuri mu bikorwa byo kubwira abandi no kubamurikira ibyo bakoze.
 - Abafite ibyo bagenerwa byihariye mu myigire yabo; ababa hafi kandi akabaha gukora ibikorwa bafitiye ubushobozi.
- Urugero:** Kwegereza abandi ibikoresho, kubitera amazi, ...
- Aha ibitsina byombi uburenganzira bungana mu gukora ibikorwa bitandukanye bicengeza isomo ryizwe bose baboha.
 - Yunganira abafite ibibazo mu kuboha umusambi uko babisabwe ku buryo buri wese abyikorera neza kandi yihuse atagoreka injishi.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. **Urugero:** Ubigenza ute iyo uboha umusambi mu bwatsi?

Ibohwa ry'umusambi rikurikiza intambwe zikurikira:

- Guca urukangaga
- Kuruhonda no kurwanika
- Guca imigwegwe
- Kuyihwihura
- Gutondera
- Kuboha utagoreka ingenge kugeza ku burebure wifuzwa.
- Gusozwa umusambi
- Gukata umusambi wuzuye
- Gushitira umusambi
- Kuzinga umusambi no kuwubika

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy'umunyeshuri byo kwibohera umusambi.

1.9.5 Isomo rya 5: Ibohwa ry'uruhago mu birere.

a. Intego

Ubumenyi:

Gusobanura uko baboha uruhago mu birere

Ubumenyigiro:

Kwibohera uruhago no kwerekana uko bikorwa

Ubukeshya:

- Kwitondera ibikoresho bishobora gukomeretsa
- Gufata neza ibikoresho
- Kugira umuco wo gukunda ibibereye ijisho

b. Intangiriro

Kwitegereza amashusho agaragaza uko baboha uruhago no kuyaganiraho

c. Imfashanyigisho

Ubwatsi, ibirere, imigwegwe, ubuhivu, amazi, agasambi, umukeka imigozi ya rarama n'ibindi bibohesho, icyuma, umukasi, urwembe.

d. Ibikorwa by'imyigire n'imyigishirize

- Umwarimu ategura imfashanyigisho zihagije zituma umunyeshuri amenya uko baboha uruhago mu birere
- Aha abanyeshuri amabwiriza akwiye gukurikizwa igihe bakora ibikorwa byo kwitegereza no kwigana uko baboha uruhago mu birere.
- Umwarimu yerekerabanyeshuri uko baboha uruhago mu birere na bo bakabyigana.
- Aha buri munyeshuri umwanya wo gukora ku giti ke.
- Abafite ibyobagenerwa byihariye mu myigire yabo; ababa hafi kandi akabaha gukora ibikorwa bafiteye ubushobozi nko kubohesha umunwa, ukuboko kumwe, amano.
- Ayobora abanyeshuri mu bikorwa byo kubwira no kumurikira abandi ibyobakoze.
- Aha ibitsina byombi uburenganzira bungana mu gukora ibikorwa bitandukanye bicengeza isomo ryizwe bese baboha.
- Yunganira abafite ibibazo mu kuboha uruhago uko babisabwe ku buryo buri wese abyikorera neza, yihuse kandi bitunganye.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyobize. **Urugero:** Ibohwa ry'uruhago mu birere rikorwa rite?

Ibohwa ry'uruhago mu birere rikorwa ritya:

- Gutondera uruhago (utangira nk'utangira umusambi)
- Guhinamo kabiri uhiniye ku ngenge watondereyemo
- Kuboha uruhago uzenguruka.
- Gusozana no gukegeta uruhago.
- Kuboha umushumi no kuwushyiraho
- Gushitira

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy'umunyeshuri byo kwibohera uruhago mu birere.

1.9.6 Isomo rya 6: Gukora ibinyampande.

a. Intego

Ubumenyi :

Gusobanura uko bakora ibinyampande

Ubumenyigiro:

Kwikorera ibinyampande mu bintu binyuranye

Ubukasha:

- Kwitondera ibikoresho bishobora gukomeretsa
- Gufata neza ibikoresho
- Kugira umuco wo gukunda ibibereye ijisho

b. Imyitozo y’isubiramo /Intangiriro

- Kubaza abanyeshuri amazina y’ ibinyampande bazi n’imiterere yayo
- Kubasaba kwitegereza mu gitabo cyabo amashusho agaragaza uko bakora ibinyampande mu bipapuro, mu bikarito

c. Imfashanyigisho

Ibipapuro binini, ibikarito, umukasi, urwembe, irati, agacamurongo.

d. Ibikorwa by’imyigire n’imyigishirize

- Umwarimu ategura imfashanyigisho zihagije zituma umunyeshuri amenya uko bakora ibinyampande mu bipapuro cyangwa mu bikarito
- Umwarimu yerekera abanyeshuri uko bakora ibinyampande mu bipapuro cyangwa mu bikarito
- Aha abanyeshuri amabwiriza akwiye gukurikizwa igihe bakora ibikorwa byo kwitegereza, kwigana no kwikorera ubwabo amashushongerero mu bipapuro cyangwa mu bikarito.
- Aha buri munyeshuri umwanya wo kunoza ibyo atakoze neza
- Abafite ibyo bagenerwa byihariye mu myigire yabo; ababa hafi kandi akabaha gukora ibikorwa bafitiye ubushobozi.

Urugero: Gukoresha ibirenge, amano ...

- Ayobora abanyeshuri mu bikorwa byo kubwira abandi ibyo bakoze no kubibamurikira.
- Aha ibitsina byombi uburenganzira bungana mu gukora ibikorwa bitandukanye bicengeza isomo ryizwe.
- Yunganira abafite ibibazo mu gukora ibinyampande uko babisabwe ku buryo buri wese abyikorera neza kandi yihuse.

e. Umwanzuro w’isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. *Urugero:* Ikorwa ry’ ibinyampande mu mpapuro no mu bikarito rikorwa rite?

Ikorwa ry' ibinyampande mu mpapuro no mu bikarito rikorwa ritya:

- Gushyira urupapuro cyangwa igikarito ku meza
- Gushushanya kare,urukiramende cyangwa mpandeshatu ukoresheje ilati n'inguni.
- Gukata neza ikinyampande wakoze utaryagagura urupapuro cyangwa igikarito.

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy'umunyeshuri byo gukora ibinyampande mu bipapuro no mu bikarito.

g. Ibisubizo by'umwitozo wo kuri iki kigwa, uri ku rupapuro rwa 12 mu gitabo cy'umunyeshuri

1. Guca imfuruka igorotse nkoresha inguni no gupima cm 10 za buri murongo ukoze iyo mfuruka.
2. Guca indi mfuruka igorotse iteganye n'iyi nacye mbere.
3. Kugenzura ko ikinyampande 4 zingana n'imfuruka 4 zigorotse.
4. Gukata kare nakoze nifashishije umukasi.

1.9.7 Isomo rya 7: Kubumba ikibindi

a. Intego

Ubumenyi:

Gusobanura uko babumba ikibindi

Ubumenyigiro:

Kwibumbira ikibindi

Ubukasha:

- Kwitondera ibikoresho bishobora gukomeretsa
- Gufata neza ibikoresho
- Kugira umuco wo gukunda ibibereye ijisho.

b. Intangiriro

- Kubaza abanyeshuri abigeze kubumba akabindi mu byondo, mu ibumba rya kizungu bagasobanura uko bikorwa.
- Kubasaba Kwitegereza amashusho agaragaza uko babumba ikibindi no kuyaganiraho.

c. Imfashanyigisho

Ibumba, insibo, urujyo, inkogoto, amazi.

d. Ibikorwa by'imyigire n'imyigishirize

- Umwarimu ategura imfashanyigisho zihagije zituma umunyeshuri amenya uko babumba ikibindi.

- Umwarimu yerekera abanyeshuri mu bikorwa binyuranye byo kubumba ikibindi na bo bakabyigana.
- Ayobora abanyeshuri igihe bakora ibikorwa mu matsinda (Gukura no gukata ibumba,...) n’ibyo buri wese akora ku giti ke (kubumba).
- Aha buri munyeshuri umwanya wo gukora ku giti ke.
- Abafite ibyo bagenerwa byihariye mu myigire yabo; ababa hafi kandi akabaha gukora ibikorwa bafitiye ubushobozi.
- Aha abanyeshuri amabwiriza akwiye gukurikizwa igihe bakora ibikorwa byo kwitegereza, kwigana.
- Ayobora abanyeshuri mu bikorwa byo kubwira abandi ibyo bakoze no kubimurika.
- Aha ibitsina byombi uburenganzira bungana mu gukora ibikorwa bitandukanye bicengeza isomo ryizwe.
- Yunganira abafite ibibazo mu kubumba ikibindi uko babisabwe ku buryo buri wese abyikorera neza kandi yihuse.

e. Umwanzuro w’isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. **Urugero:** Ukubumba ikibindi bikorwa bite?

Kubumba ikibindi bikorwa bitya:

- Gukura ibumba mu nganzo
- Gukatakata ibumba
- Kurikandira ku rujyo ugakora indiba
- Gukora umubyimba w’ikibindi
- Gusena neza ikibindi kigafata ishusho nziza
- Gushyiraho urugara no kurusena
- Kwanika mu minsi nibura itanu
- Gutwika no kwarura ikibindi kigatangira gukoreshwa.

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy’umunyeshuri byo kubumba ikibindi.

g. Ibisubizo by’umwitozo wo kuri iki kigwa, uri ku rupapuro rwa 28 mu gitabo cy’umunyeshuri

Ibumba, amazi, urujyo, insibo, igikubyo, inkogoto.

1.9.8 Isomo rya 8: Gukora imodoka

a. Intego

Ubumenyi:

Gusobanura uko bakora imodoka mu mikwege

Ubumenyigiro:

Kwikorera imodoka mu mikwege

Ubukasha:

- Kwitondera ibikoresho bishobora gukomeretsa
- Gufata neza ibikoresho
- Kugira umuco wo gukora ibibereye ijisho

b. Intangiriro

Kwitegereza amashusho agaragaza uko bakora imodoka mu mikwege no kuyaganiraho

c. Imfashanyigisho.

Udukwege, imikoba , imifuniko y’amacupa , kamambiri zishaje, urwembe, umukasi, ipensi,

d. Ibikorwa by’imyigire n’imyigishirize

- Umwarimu ategura imfashanyigisho zihagije zituma umunyeshuri amenya uko bakora imodoka mu mikwege.
- Umwarimu yerekera abanyeshuri uko bakora imodoka mu mikwege na bo bakabyigana.
- Aha abanyeshuri amabwiriza akwiye gukurikizwa igihe bakora ibikorwa byo kwitegereza, kwigana no kwikorera imodoka mu mikwege.
- Aha buri munyeshuri umwanya wo gukora ku giti ke.
- Abafite ibyo bagenerwa byihariye mu myigire yabo; ababa hafi kandi akabaha gukora ibikorwa bafitiye ubushobozi.
- Ayobora abanyeshuri mu bikorwa byo kubwira no kumurikira abandi ibyo bakoze.
- Aha ibitsina byombi uburenganzira bungana mu gukora ibikorwa bitandukanye bicengeza isomo ryizwe.
- Yunganira abafite ibibazo mu gukora imodoka uko babisabwe ku buryo buri wese abyikorera neza kandi yihuse.

e. Umwanzuro w’isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. **Urugero:** Gukora imodoka mu mikwege bikorwa bite?

Gukora imodoka mu mikwege bikorwa bitya:

- Gukurikiranya ibi bice:
 - a. Igice cyo hasi
 - b. Igice cyo hejuru
 - c. Inzugi
 - d. Igice gifasha amapine gukata
 - e. Gukora amapine no kuyashyiraho
 - f. Gukora diregisiyo no kuyishyiraho
 - g. Gusunika imodoka yuzuye

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy'umunyeshuri byo gukora imodoka.

g. Ibisubizo by'umwitozo uri ku rupapuro rwa 19 mu gitabo cy'umunyeshuri

Imikwege, umukoba, urwembe, amapine, imifuniko, imigano.

1.10 Gusozwa umutwe

a. Inshamake y'ibikubiye muri uyu mutwe

- Gukora igihanaguzo k'ikibaho
- Kuboha agatambaro, imfubikajosi hakoresheje imboho bufuro n'imboho nzirimwe.
- Kuboha umusambi mu bwatsi
- Kuboha uruhago mu birere
- Gukora amashushongero nka mpandeshatu, kare n'urukiramende mu mpapuro cyangwa mu bikarito
- Kubumba ikibindi mu ibumba
- Gukora imodoka mu mikwege

b. Ubumenyi bw'inyongera umwarimu asabwa kugira

- Kuba azi neza gukora igihanaguzo, kuboha imfubikajosi n'imipira mu budodo, kuboha uruhago mu birere n'umusambi mu bwatsi no gukata amashushongero mu mpapuro no mu bikarito. Byose akabikora yihuta kandi neza.
- Kuba azi neza kudodesha intoki no kubohesha inshinge, yaba atabizi akiyambaza abantu babizi yabona hafi y'ishuri.
- Kumenya ibikoresho byose byakwifashishwa mu gukora ibikinisho, ibikoresho n'imfashanyigisho biri mu isomo rye.
- Kumenya kuyobora ibikorwa byose kandi yita kuri buri munyeshuri ntawe asize inyuma.
- Gusobanura ku buryo bwimbitse no kwerekera abanyeshuri uko bikorera ibikinisho, imfashanyigisho n'ibikoresho.
- Gutegura no gukoresha neza imfashanyigisho zinyuranye ku buryo zifasha abanyeshuri gucengerwa neza kandi vuba n'ibyo bize.
- Kumenya neza imyigishirize y'isomo ry'Ubumenyi n'Ikoranabuhanga Riciriritse ijyanye n'integanyanyigisho ishingiye ku bushobozi.
- Kumenya uko yacengeza ingingo nsanganyamasomo igihe yigisha kuboha, kudoda, kubumba no gukora ibikinisho n'imfashanyigisho umunyeshuri azakora.

c. Ibisubizo by'isuzuma risoza umutwe wa 1 ku rupapuro rwa 20 mu gitabo cy'umunyeshuri

1. Ibisubizo biratandukanye bitewe n'uko buri munyeshuri aboha ibyo yabwiwe kandi agakurikiza amabwiriza yahawe.
2. Ibisubizo biratandukanye bitewe n'uko buri munyeshuri akora amashushongero yabwiwe kandi agakurikiza amabwiriza yahawe.
3. Ibisubizo biratandukanye bitewe n'uko buri munyeshuri akora imodoka yabwiwe kandi agakurikiza amabwiriza yahawe.
4. Ibisubizo biratandukanye bitewe n'uko buri munyeshuri abumba akabindi yabwiwe kandi agakurikiza amabwiriza yahawe.
- 5.

| Igikorwa | Ibikoresho |
|---------------------|---|
| Kuboha umusambi | Ubwatsi, imigwegwe, icyuma, amazi, umuhini |
| Kuboha imvumba | Ibirere, amazi, icyuma |
| Gukora ibinyampande | Umukasi, impapuro, ibikarito, amakaramu y'ubwoko bwose, ameza, irati, inguni, |
| Kubumba akabindi | Ibumba, insibo, igikubyo, amazi, inkogoto,... |
| Gukora imodoka | Insinga, kamambiri, imigozi, imigano |

6.
 - a. Imfubikajosi: Iturinda imbeho igihe hakonje.
 - b. Umusambi: Twicaraho igihe dukora ibikorwa bitandukanye, kwanikaho imyaka.
 - c. Imvumba: Tuyitwaramo ibikoresho by'ishuri cyangwa tukayihahiramo.
 - d. Akabindi: Tukavomesha amazi cyangwa tukakabikamo ayo twavomye, tukabikamo umusaruro cyangwa imbuto, gushigishiramo ikigage, kubika ibindi binyobwa (urwagwa...).
 - e. Igihanaguzo k'ikibaho: Tugihanaguza ikibaho twigiraho cyangwa intebe twicaraho.
7. Ibisubizo biratandukanye bitewe n'ibyo abanyeshuri bahisemo gukora.

d. Ibikorwa by'umwihariko bihabwa abanyeshuri bagenda buhoro mu myigire n'ibisubizo byabyo

Abasaba gukora utuntu duto, tudatinda ariko tugaragaza ko bamenye gukora icyo basabwa.

Ibisubizo: Ibintu bitandukanye abanyeshuri bakora.

e. Ibikorwa by'umwihariko bihabwa abanyeshuri bihuta cyane mu myigire kurusha abandi n'ibisubizo byabyo

Abasaba gukora ibintu binini cyangwa birebire ugereranije n'iby'abandi

Ibisubizo: Ibintu bitandukanye abanyeshuri bakora.

UMUTWE WA KABIRI: IMIKORESHEREZE YA TEREFONI

(Urupapuro rwa 21 – 50 mu gitabo cy'umunyeshuri)

2.1 Ubushobozi bw'ingenzi bugamijwe

Gukoresha terefoni mu guhamagara, mu kohereza no kwakira ubutumwa bugufi no mu ikoranabuhanga rusange .

2.2. Ibyizwe mbere bifitanye isano n'uyu mutwe

Ibikoresho by'ibanze mu ikoranabuhanga.

Urugero: Terefoni, tereviziyo, radiyo na mudasobwa.

2.3 Ubumenyi ku ngingo nsanganyamasomo buri muri uyu mutwe n'uko bugerwaho

- *Ubwuzuzanye bw'ibitsina byombi* mu gihe abana b'abakobwa n'abahungu bakoresha terefoni bahawe n'umurezi wabo, bakora ibikorwa bikurikira: Guhamagarana, kwandikirana no koherezanya ubutumwa bugufi, kubika inomeru, gufata amajwi n'amashusho ndetse no gukoresha terefoni mu ikoranabuhanga.
- *Gufata neza ibidukikije* mu gihe abanyeshuri birinda guta udukarita twa terefoni twakoreshejwe aho babonye hose no kuduharuza ibyo babonye byose.
- *Umuco w'amahoro* mu gihe akorana na bagenzi be mu bwumvikane nta we abangamiye, bahererekanya terefoni, bavugana neza.
- *Umuco wo gukoresha neza umutungo* igihe akoresha neza terefoni yahawe yirinda kuyitura hasi, mu mazi cyangwa kuyikoresha ibyo ataherewe uburenganzira .
- *Umuco wo gukoresha ibyujuje ubuziranenge* mu gihe akoresha terefoni itangiza ubuzima bwe cyangwa ngo ihumanye ikirere nk'izashaje zitagira urugi, izishyuha cyane,...
- *Ubuzima bw'imyororokere* mu gihe akoresha terefoni neza adata umwanya areba ibintu by'urukozasoni ku mbuga nkoranyambaga zitandukanye.
- *Kurwanya jenoside n'ingengabitekerezo yayo* adakoresha terefoni asoma inyandiko zifitanye isano no gupfobya, guhakana jenoside yakorewe abatutsi n' ibirebana n'ubuhezanguni.

2.4 Ubushobozi umunyeshuri azunguka muri uyu mutwe

- **Kwitegereza** agasobanura ibyo yitegereje kandi akabyigana
Urugero:
 - Kwitegereza ibice bya mwandikisho (keyboard) ya terefoni akabisobanura
 - Kwitegereza amashusho yerekana uko bakoresha terefoni akabyigana,...
- **Gushyikirana n'abandi** igihe akorera mu matsinda cyangwa afatany

n'abandi kuko akenshi terefoni bakoresha aba ari nk'imwe, ntiyikubira wenyine, aha n'abandi urubuga bakayitegereza kandi bakayikoresha.

- **Gutekereza** ku bikorwa asabwa gukora yifashije terefoni, bityo akabikora neza atibeshya.

Urugero: Inzira anyuramo afata amajwi, yoherereza ubutumwa, ...

- **Gukoresha imvugo isobanutse** igihe asobanura ibyo yakoze yifashishije terefoni

Urugero:

- Bavuga kohereza ubutumwa bugufi ntibavuga gusendinga mesegi.
- Bavuga gufata amajwi , ntibavuga kuricodinga

- **Guhanga udushya** mu gihe acukumbura kandi akabasha gukora ibirenze ibyo yize

Urugero: Kohereza ubutumwa bugufi bumwe ku manomero atandukanye icyarimwe

- **Kugira amashyushyu yo guhora yiyungura ubumenyi** mu gukoresha terefoni z'amoko atandukanye kandi mu buryo bunoze

Urugero: Nko gukuramo urufunguzo, gukoresha smartphone,...

- **Kwikemurira ibibazo** mu gihe yifashisha terefoni mu kwikemurira ibibazo

Urugero: Nko kugura umuriro igihe ushize, kugura ikarita yo guhamagara,

- **Gushakashaka no kuvumbura** ibindi yakwifashisha mu ikoranabuhanga akoresheje terefoni.

Urugero: Gukoresha terefoni akareba amakuru, ibiri ku mbuga nkoranyambaga, gukoresha inkoranya ,...

- **Kumenya kubara no gukoresha imibare** igihe abika inomero muri terefoni, abarisha terefoni, n'ibindi.

2.5 Amagambo umunyeshuri yunguka muri uyu mutwe

Terefoni ni igikoresho k'ikoranabuhanga kifashishwa mu guhamagara, kwitaba, kwakira ubutumwa bugufi, kubwoherereza, gufata amajwi no gufata amashusho.

mwandikisho(keyboard): Ni igice cya terefoni kiriho imibare, inyuguti n'ibimenyetso byihariye bifasha kwandika.

"Mobile money": Ni uburyo bwo gukoresha ikoranabuhanga mu kohereza amafaranga, bukoreshwa n'ikigo k'itumanaho cya MTN.

"Tigo cash": ni uburyo bwo gukoresha ikoranabuhanga mu kohereza amafaranga bukoreshwa n'ikigo k'itumanaho cya TIGO

"Airtel money": ni uburyo bwo gukoresha ikoranabuhanga mu kohereza amafaranga bukoreshwa n'ikigo k'itumanaho cya AIRTEL.

2.6 Ikibazo nyamukuru

- Umwarimu asomesha agakuru kajyanye n'ikibazo cy'abaturage batazi gukoresha terefoni ngo bagure umuriro.
- Asaba abanyeshuri kukaganiraho no kugatangaho ibitekerezo bagaragaza ukuntu ibyo bibazo bishobora gukemuka abo baturage bagakoresha terefoni mu kugura ibintu bakeneye.
- Abasobanurira ko ibisubizo nyabyo bazajya babibona mu masomo bagiye kwiga muri uyu mutwe.

2.7 Uko umwarimu yita by'umwihariko ku bafite ibibazo byihariye yigisha uyu mutwe

- Abagenda buhoro mu myigire yabo abaha ibikorwa byabateganyirijwe usanga muri iki gitabo
- Abafite ubumuga bw'ingingo banza umenye izo ari zo ubategurire imfashanyigisho zihariye n'imyitozo wagenera buri wese bibafasha gukoresha neza terefoni.
- Abafite impano yo kumva no gukora vuba cyane bahe ibikorwa bituma bacukumbura isomo usanga muri iki gitabo.

2.8 Ibyigwa biri muri uyu mutwe wa 2

| | Urutonde rw'ibygwa | Umubare w'amasomo (periods): 8 |
|---|---|--------------------------------|
| 1 | Ibice bigize mwandikisho (keyboard) ya terefoni | 1 |
| 2 | Kwandika no kohereza ubutumwa bugufi | 1 |
| 3 | Kwakira no gusubiza ubutumwa bugufi | 1 |
| 4 | Kubika inomeru no guhamagara | 1 |
| 5 | Gufata amajwi no gufata amashusho | 1 |
| 6 | Terefoni mu ikoranabuhanga | 2 |
| 7 | Isuzuma risoza umutwe wa 2 | 1 |

2.9 Imyigishirize ya buri somo

2.9.1 Isomo rya 1: Ibice bigize mwandikisho (keyboard) ya terefoni

a. Intego

Ubumenyi:

Kurondora ibice bya mwandikisho (keyboard) ya terefoni

Ubumenyigiro:

Gutandukanya ibice by'ingenzi bya mwandikisho (keyboard) ya terefoni

Ubukasha:

Kugaragaza amatsiko yo kumenya gukoresha terefoni muri gahunda zinyuranye.

b. Intangiriro

Kwitegereza amashusho ariho ibice bigize mwandikisho (keyboard) ya terefoni kubiganiraho no gusubiza ibibazo bijyanye n'ayo mashusho

c. Imfashanyigisho

Terefoni, amashusho ya mwandikisho (keyboard) ya terefoni

d. Ibikorwa by'imyigire n'imyigishirize

- Gutegura imfashanyigisho zihagije zituma umunyeshuri amenya ibice bigize mwandikisho (keyboard) ya terefoni
- Kuyobora abanyeshuri igihe bakora imyitozo n'ibikorwa mu matsinda yo kugaragaza ibice bya mwandikisho (keyboard) ya terefoni.
- Guha abanyeshuri amabwiriza akwiye gukurikizwa igihe bakora ibikorwa byo kwitegereza, gushakashaka no gusobanura ibyo bavumbuye bijyanye n'ibice bya mwandikisho (keyboard) ya terefoni.
- Yuzuzanya ibitekerezo byabo igihe hari ibyo basobanura bituzuye cyangwa bitumvikana neza, akabafasha kubikora mu mvugo isobanutse, batajijinganya cyangwa ngo barye iminwa.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. ***Urugero:*** mwandikisho (keyboard) ya terefoni igizwe n'ibiki?

mwandikisho (keyboard) ya terefoni igizwe n'ibi bikurikira:

1. Imibare ifasha kwandika inomero za terefoni, amafaranga, umubare w'ibanga, isaha n'iminota ndetse n'amatariki
2. Inyuguti : mwandikisho (keyboard) ya terefoni iriho inyuguti 26 zifasha kwandika ubutumwa, amazina n'ibindi.
3. Ibimenyetso byihariye birimo amoko menshi. Hari icyo guhamagara, gusoza guhamagara, utwatuzo tunoza inyandiko, kureba amafaranga, gushyiramo ikarita, kwandika imibare, kwandika inyuguti nkuru n'intoya n'ibindi.

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy'umunyeshuri byo gusobanura ibice bigize mwandikisho (keyboard) ya terefoni n'akamaro ka buri gice.

g. Ibisubizo by'umwitozo ku rupapuro rwa 22 mu gitabo cy'umunyeshuri

a. QWERT

b. 12345

c. →, ←, @, #, +,

2.9.2 Isomo rya 2: Kwandika no kohereza ubutumwa bugufi kuri terefoni

a. Intego

Ubumenyi:

Kumenya kwandika no kohereza ubutumwa bugufi ukoresheje terefoni.

Ubumenyigiro:

Kwandika ubutumwa bugufi kuri terefoni no kubwohereza ukoresheje terefoni.

Ubukasha:

- Kwishimira ikoranabuhanga rikoresha terefoni
- Kugaragaza amatsiko yo kumenya gukoresha terefoni muri gahunda zinyuranye.

b. Intangiriro

Kwitegereza amashusho atandukanye yerekana uko bandika n'uko bohereza ubutumwa bugufi kuri terefoni.

c. Imfashanyigisho

Terefoni, amashusho ya terefoni z'amoko atandukanye n'ibindi

d. Ibikorwa by'imyigire n'imyigishirize

- Gutegura imfashanyigisho zihagije zituma umunyeshuri yandika ndetse yohereza ubutumwa bugufi kuri terefoni.
- Kugenzura neza ko abanyeshuri bakurikiza amabwiriza bahawe yo kwitegereza amashusho agaragaza uko bandika, bakanohereza ubutumwa bugufi kuri terefoni.
- Guha buri munyeshuri umwanya wo kwandika no kohereza ubutumwa kuri terefoni kandi akagenzura ko bose babikoze neza.
- Umwarimu yuzuzura ibitekerezo by'abanyeshuri igihe basobanura uko babigenza mu kwandika no kohereza ubutumwa bugufi hakoreshejwe terefoni, akabafasha kubikora mu mvugo isobanutse, batajijinganya cyangwa ngo barye iminwa kandi akoresha imvugo yabugenewe isobanutse.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. **Urugero:** Kwandika no kohereza ubutumwa bugufi bikorwa bite?

Mu kwandika no kohereza ubutumwa bugufi ukora ibi bikurikira:

1. Ukanda kuri button ya "**menu**", ugahitamo agashusho gasobanura ubutumwa bugufi.
2. Kwandika ubutumwa bugufi ushaka ukoresheje mwandikisho (keyboard)
3. Kwandika inomero y'uwo ugiye kubwoherereza
4. Gukanda kuri button ya "**send**"

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy'umunyeshuri byo gusobanura uko bandika n'uko bohereza ubutumwa bugufi.

g. Ibisubizo by'umwitozo ku rupapuro rwa 27 mu gitabo cy'umunyeshuri

Ibisubizo biratandukanye kuko buri munyeshuri yandika ubutumwa bwihariye.

2.9.3 Isomo rya 3: Kwakira no gusubiza ubutumwa bugufi ukoresheje terefoni

a. Intego

Ubumenyi:

Kumenya kwakira no gusubiza ubutumwa bugufi

Ubumenyigiro:

Gusubiza ubutumwa bugufi wakiriye.

Ubukasha:

- Kwishimira ikoranabuhanga rikoresha terefoni
- Kugaragaza amatsiko yo kumenya gukoresha terefoni muri gahunda zinyuranye.

b. Intangiriro

Kwitegereza amashusho atandukanye yerekana uko kwakira no gusubiza ubutumwa bugufi bikorwa.

c. Imfashanyigisho

Terefoni, amashusho ya terefoni z'amoko atandukanye n'ibindi.

d. Ibikorwa by'imyigire n'imyigishirize

- Gutegura imfashanyigisho zihagije zituma umunyeshuri asobanura neza uko bakira bakanasubiza ubutumwa bugufi kuri terefoni.
- Kuyobora abanyeshuri mu kwitegereza amashusho agaragaza uko bakira ubutumwa bugufi kuri terefoni no gusobanura uko babusubiza.
- Umwarimu yuzuzza ibitekerezo by'abanyeshuri igihe cyose basobanura uko bakira n'uko basubiza ubutumwa bugufi abafasha kwisobanura batajijinganya cyangwa ngo barye iminwa.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. ***Urugero:*** Kwakira ubutumwa bugufi bikorwa bite?

Mu kwakira ubutumwa bugufi ukora ibi bikurikira:

1. Ukanda kuri "icon" (sms/messages).
2. Ugasoma ubwo butumwa

Mu gusubiza ubutumwa bugufi ukora ibi bikurikira:

- Kubukandaho bugafunguka
- Gukanda munsu yabwo, ugahita uhandika ibyo ushaka gusubiza.

- Gusoma ubutumwa ugiye kohereza ngo urebe ko nta kosa ririmo.
- Gukanda "send".

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy'umunyeshuri byo gusobanura uko bakira bakanasubiza ubutumwa bugufi.

2.9.4 Isomo rya 4: Kubika inomeru no guhamagara

a. Intego

Ubumenyi:

Kumenya kubika nomero no guhamagara ukoresheje terefoni

Ubumenyigiro:

Gusobanukirwa uko bareba muri terefoni abaguhamagaye abo wahamagaye, abitabye n'abatitabye.

Ubukasha:

- Kwishimira ikoranabuhanga rikoresha terefoni
- Kugaragaza amatsiko yo kumenya gukoresha terefoni muri gahunda zinyuranye

b. Imyitozo y'isubiramo /Intangiriro

Uko bandika, bohereza , bakira n'uko basubiza ubutumwa bugufi.

c. Imfashanyigisho

Terefoni n'amashusho ya terefoni yerekana uko babika inomeru n'uko bahamagara

d. Ibikorwa by'imyigire n'imyigishirize

- Gutegura no gutunganya imfashanyigisho zihagije zituma umunyeshuri amenya kubika inomeru no guhamagara akoresheje terefoni.
- Guha abanyeshuri amabwiriza akwiye gukurikizwa igihe bakora ibikorwa byo kwitegereza, gushakashaka no gusobanura ibyo bitegereje ku mashusho agaragaza uko babika inomeru muri terefoni n'uko bahamagara bakoresheje terefoni.
- Umwarimu ayobora abanyeshuri mu bikorwa byo kubwira abandi ibyo bagezeho mu byo bakoreye mu matsinda cyangwa ubushakashatsi bakoze bujyanye n'uburyo bwo guhamagara inomeru isanzwe itari muri terefoni.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. **Urugero:** Kubika inomeru muri terefoni bikorwa bite?

- Iyo ubika inomeru muri terefoni ukora ibi bikurikira:
 1. Ukanda ku kamenyetso gafite umutwe w'umuntu.
 2. Ukandika izina n'inomeru ahabugenewe

3. Guhitamo aho ubika nko kuri "simcard, google, terefoni,...
 4. Kubika "Save/done"
- Iyo uhamagara inomero idasanzwe ibitse muri terefoni ukora ibi bikurikira:
 1. Kujya aho bahamagarira
 2. Kwandika inomero ushaka guhamagara
 3. Guhitamo umurongo uhamagaza
 4. Gukanda buto ihamagara
 5. Gushyira ku gutwi ukumva ko iri ku murongo
 6. Gukanda buto isoza guhamagara niba umaze kuvugana n'uwo wahamagaye.
 - Iyo uhamagara inomero isanzwe ibitse muri terefoni ukora ibi bikurikira:
 1. Gukanda "menu" ya terefoni yawe
 2. Kujya ahabikwa inomero
 3. Guhitamo inomero ushaka guhamagara
 4. Gukanda kuri ya nomero
 5. Guhitamo umurongo uhamagaza
 6. Gushyira ku gutwi ugategereza ko bakwitaba mukavugana
 7. Guhagarika uwo mumaze kuvugana, ukanda "button" isoza guhamagara

e. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy'umunyeshuri byo gusobanura uko babika nomero n'uko bahamagara bakoresheje terefoni.

2.9.5 Isomo rya 5: Gufata amajwi no gufata amafoto

a. Intego

Ubumenyi:

Kumenya uko bafata amajwi n'uko bafata amafoto hifashishijwe terefoni

Ubumenyigiro:

Gukurikiza uburyo bwo gufata amajwi n'uburyo bwo gufata amafoto hifashishijwe terefoni

Ubukeshya:

Kwishimira ikoranabuhanga rikoresha terefoni

Kugaragaza amatsiko yo kumenya gukoresha terefoni muri gahunda zinyuranye.

b. Imyitozo y'isubiramo /Intangiriro

Imyitozo yo kubika inomero n'iyo guhamagara

Urugero:

1. Sobanura muri make uko wabika inomero y'inshuti yawe muri terefoni

2. Vuga intambwe zikurikizwa iyo ugiye guhamagara inomero ya terefoni usanzwe ufite muri terefoni yawe
3. Erekanwa intambwe zikurikizwa iyo ugiye guhamagara inomero ya terefoni udasanze ufite muri terefoni yawe

c. Imfashanyigisho:

Terefoni n'amashusho ya terefoni yerekana uko bafata amajwi n'uko bafata amafoto bakoresheje terefoni .

d. Ibikorwa by'imyigire n'imyigishirize

- Gutegura imfashanyigisho zihagije zituma umunyeshuri amenya uko bafata amajwi n'uko bafata amafoto hifashishijwe terefoni.
- Kunganira abanyeshuri igihe bakora ibikorwa byo kwitegereza amashusho agaragaza uko bafata amafoto n'uko bafata amajwi hifashishijwe terefoni kandi bakabisobanura mu mvugo yumvikana.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. *Urugero:* Gufata ifoto ukoresheje terefoni bikorwa bite?

- Mu gufata ifoto ukoresheje terefoni ukora ibi bikurikira :
 1. Gukanda "menu"
 2. Gukanda kuri porogaramu ya "camera"
 3. Kwitegereza neza icyo/uwo ugiye gufotora
 4. Gukanda kuri kamera ahafata ifoto
 5. Kureba ifoto wafotoye
- Mu gufata amajwi ukoresheje terefoni ukora ibi bikurikira :
 1. Gukanda menu
 2. Gukanda kuri porogaramu yo gufata amajwi
 3. Kwegereza terefoni ibyo ushaka gufata amajwi
 4. Gukanda kuri "menu" cyangwa kuri "button" itukura ugatangira gufata amajwi.
 5. Guhagarika urangije ukora aho wakoze mbere utangira gufata amajwi.
 6. Kumva ibyo wafashe unyuzwe ahabikwa amajwi.

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy'umunyeshuri byo gusobanura uko bafata amajwi n'uko bafata amashusho hifashishijwe terefoni.

2.9.6 Isomo rya 6: Terefoni mu ikoranabuhanga

a. Intego

Ubumenyi:

Kumenya uko bakoresha terefoni mu ikoranabuhanga nko kohereza no kwakira

amafaranga, kugura umuriro,...

Ubumenyigiro:

Gukurikiza uburyo bwo gukoresha terefoni mu ikoranabuhanga nko kohereza no kwakira amafaranga, kugura umuriro, ...

Ubukeshya:

- Kwishimira ikoranabuhanga rikoresha terefoni
- Kugaragaza amatsiko yo kumenya gukoresha terefoni muri gahunda zinyuranye.

b. Imyitozo y’isubiramo /Intangiriro

Imyitozo yo gufata amajwi n’iyo gufata amashusho hifashishijwe terefoni .

c. Imfashanyigisho

Terefoni n’amashusho ya terefoni yerekana intambwe zose zikurikizwa iyo ugiye kohereza amafaranga, kureba amafaranga ufite, kugura umuriro,...

d. Ibikorwa by’imyigire n’imyigishirize

- Gutegura imfashanyigisho zihagije zituma umunyeshuri amenya uko bakoresha terefoni mu ikoranabuhanga nko kohereza no kwakira amafaranga, kugura umuriro, kugura ifatabuguzi rya televiziyo,...
- Umwarimu aha abanyeshuri amabwiriza akwiye gukurikizwa igihe bitegereza neza amashusho abafasha gusobanukirwa no kwivumburira uko bakoresha terefoni mu ikoranabuhanga.
- Umwarimu ashyira abanyeshuri mu matsinda akabayobora mu bikorwa byo kohereza amafaranga, kugura ibintu bitandukanye ukoresheje terefoni.
- Yuzuzanya ibitekerezo byabo igihe basobanurira abandi ibyo bakoze agenzura ko bakoresha imvugo isobanutse, batajijinganya cyangwa ngo barye iminwa.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. ***Urugero:*** Gukoresha terefoni mu ikoranabuhanga nko kohereza no kwakira amafaranga, kugura umuriro bikorwa bite?

Bikorwa bitya:

- Uko bohereza amafaranga bakoresheje "MTN mobile money"
- Uko bareba amafaranga asigaye kuri "MTN mobile money"
- Uko bohereza amafaranga bakoresheje "Tigo cash"
- Uko bareba amafaranga asigaye kuri "Tigo cash"
- Uko bohereza amafaranga bakoresheje "Airtel money"
- Uko bareba amafaranga asigaye kuri "Airtel money"
- Kugura umuriro hakoreshejwe "MTN mobile money"
- Kugura ikarita hakoreshejwe "MTN mobile money"
- Kugura ifatabuguzi rya "startimes" hakoreshejwe "MTN mobile money"

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy'umunyeshuri byo gusobanura uko bakoresha terefoni mu ikoranabuhanga nko kohereza amafaranga, kugura umuriro, kugura ifatabuguzi rya tereviziyo,... bakoresheje imirongo yose ya terefoni ikoreshwa mu Rwanda, ...

2.10 Gusozwa umutwe

a. Inshamake y'ibikubiye muri uyu mutwe

- Ibice bigize mwandikisho (keyboard) ya terefoni)
- Kwandika, kohereza no kwakira ubutumwa bugufi
- Kubika nomero no guhamagara
- Gufata amajwi n'amashusho
- Terefoni mu ikoranabuhanga

b. Ubumenyi bw'inyongera umwarimu asabwa kugira

Mbere yo kwigisha imikoreshereze ya terefoni ita kuri ibi bikurikira:

- Reba ubwoko bw'amaterefoni akunze gukoreshwa mu gace ishuri ryubatsemo abe ari yo ukoresha wigisha uyu mutwe.
- Igihe cyose uzaba uri kwigisha uyu mutwe tira terefoni abarimu bagenzi bawe cyangwa abandi bakozi b'ikigo ku buryo buri munyeshuri azabona terefoni akoresha.
- Mu gihe cyo kwigisha uko bohereza amafaranga, bagura umuriro, bagura ifatabuguzi rya tereviziyo, bagura ikarita yo guhamagara saba ubuyobozi bw'ikigo amafaranga 10, 000 yo gukoresha muri terefoni nibura 10. Ku buryo buri terefoni ikoreshwa n'itsinda ry'abanyeshuri batanu.
- Igihe wigisha isomo ryo guhamagara no koherereza ubutumwa bugufi, ibuka kugura "vuga pack" y'amafaranga make ashoboka ku materefoni nibura 10.
- Shaka "simcard" zihagije z'imirongo yose ikoreshwa mu Rwanda.

c. Ibisubizo by'isuzuma risoza umutwe wa 2 ku rupapuro rwa 49 mu gitabo cy'umunyeshuri

1.
 - Ku ishusho ya mbere ni ikimenyetso gifasha kwandika imibare cyangwa guhindura ukava ku kwandika imibare ukajya ku kwandika inyuguti.
 - Ku ishusho ya kabiri herekanwe igice k'imibare cya mwandikisho (keyboard) ya mudasobwa.
2.
 - a. * na #: Kureba amafaranga, gushyiramo ikarita, kohereza amafaranga, kureba amafaranga asigaye cyangwa kugura ibyo ushaka ukoresheje imirongo yose ikoreshwa mu Rwanda.
 - b. Guhagarika guhamagara cyangwa gukupa.
 - c. Gusiga umwanya hagati y'amagambo iyo wandika ubutumwa bugufi.

3.
 - a. Igice k'inyuguti: Gifasha kwandika amagambo
 - b. Igice k'ibimenyetso byihariye: Gifasha mu kunoza ubutumwa, guhamagara, kwitaba no guhagarika.
 - c. Igice k'imibare: Gifasha kwandika imibare.
4.
 - a. Kuvanamo urufunguzo.
 - b. Kureba inomeru zose ziri muri terefoni.
 - c. Guhagarika guhamagara cyangwa gukupa.
 - d. Guhamagara.
 - e. Kureba porogaramu zose ziri muri terefoni .
 - f. Inyuguti, imibare n'ibimenyetso byihariye.
 - g. Ibimenyetso byihariye (* # : Kureba cyangwa gushyiramo amafaranga, + : kwandika inomeru yo mu kindi gihugu, : Gusiga akanya).
5. Kureba iyo inomeru
 - Gukanda kuri button ya "menu"
 - Gukanda ku gashusho ko kubika inomeru
 - Gukanda kuri "button" yo gushyiramo inomeru nshya
6.
 - Kohereza amafaranga
 - Kugura ibyo ushaka byose nk'umuriro, ifatabuguzi rya "decoder",...
 - Kumenya serivisi za banki
 - Kumenya amafaranga usigaranye n'ibindi.
7. Terefoni ifasha guhamagara, kubika inomeru, kohereza ubutumwa bugufi, ifasha mu bucuruzi n'ibindi.
8. Ibisubizo biratandukanye. Kuba buri wese afite ubutumwa bwihariye.
9.
 - a.
 - Kuja aho bahamagarira
 - Kwandika inomeru ushaka guhamagara
 - Guhitamo umurongo uhamagaza
 - Gukanda "button" ihamagara
 - Gushyira ku gutwi ukumva ko iri ku murongo
 - Gukanda "button" isoza guhamagara umaze kuvugana n'uwo wahamagaye
 - b.
 - Gukanda "menu" ya terefoni yawe
 - Kuja ahabikwa inomeru
 - Guhitamo inomeru ushaka guhamagara
 - Gukanda kuri iyo nomero
 - Guhitamo umurongo uhamagaza

- Gukanda "button" ihamagara
 - Gushyira ku gutwi ukumva ko iri ku murongo
- c.
- Guhamagara *182#
 - Hitamo ururimi, andika 2 utoranye Ikinyarwanda ukande "send"
 - Hitamo “kugura”, andika 2 ukande "send"
 - Hitamo “kugura ifatabuguzi rya tv”, andika 1 ukande "send"
 - Shyiramo umubare uteganye n’ifatabuguzi rya "DSTV" ukande kuri "send"
 - Shyira amafaranga ushaka kwishyura ifatabuguzi maze ukande "send"
 - Shyiramo numero ya "decoder" maze ukande "send"
 - Shyiramo umubare w’ibanga maze ukande "send"
 - Soma ubutumwa bukumenyesha uko igikorwa cyagenze.
 - Gukanda "button" isoza guhamagara umaze kuvugana n’uwo mwavuganaga.
- d.
- Guhamagara *182#
 - Hitamo ururimi, andika 2 gutoranya Ikinyarwanda ukande "send"
 - Hitamo “kugura”, andika 2 ukande "send"
 - Hitamo “kugura ifatabuguzi rya "tv"”, andika 1 ukande "send"
 - Shyiramo umubare uteganye n’ifatabuguzi rya "Azam TV" ukande kuri "send"
 - Shyira amafaranga ushaka kwishyura ifatabuguzi maze ukande "send"
 - Shyiramo numero ya "decoder" maze ukande "send"
 - Shyiramo umubare w’ibanga maze ukande "send"
 - Soma ubutumwa bukumenyesha uko igikorwa cyagenze.
 - Gukanda button isoza guhamagara.
- e.
- Guhamagara *500#
 - Hitamo ururimi, andika 2 utoranye Ikinyarwanda ukande "send"
 - Hitamo “kugura”, andika 2 ukande "send"
 - Hitamo “kugura ifatabuguzi rya tv”, andika 1 ukande "send"
 - Shyiramo umubare uteganye n’ifatabuguzi rya "startimes" ukande kuri "send"
 - Shyiramo umubare w'amafaranga ushaka kwishyura ifatabuguzi maze ukande "send"
 - Shyiramo numero ya decoder maze ukande "send"
 - Shyiramo umubare w’ibanga maze ukande "send"
 - Soma ubutumwa bukumenyesha uko igikorwa cyagenze.

- Gukanda "button" isoza guhamagara
- 10. Guhaha ibiribwa bitandukanye, kugura amazi, kwishyura imisoro, kwishyura, n'ibindi.

11.

- a.
 - Gukanda kuri button ya "menu"
 - Gukanda ku gashusho ka porogaramu yo gufata amajwi
 - Gukanda kuri "button" itukura (gutangira gufata amajwi)
- b.
 - Gukanda kuri button ya "menu"
 - Gukanda ku gashusho ka porogaramu yo gufata amashusho
 - Kureba ko icyo ushaka gufotora ukibona neza
 - Gukanda kuri "button" yo gufata ifoto.

12–13 Ibisubizo biratandukanye bitewe n'icyo buri munyeshuri yahisemo gukora.

d. Imyitozo y'umwihariko ihabwa abanyeshuri bagenda buhoro mu myigire n'ibisubizo byayo

Shushanya utumenyetso two kuri terefone dusobanura ibi bikurikira:

- a. Ako gufata amajwi
- b. Ako guhamagara
- c. Akerekana ubutumwa bugufi
- d. Akerekana gufata amashusho

e. Imyitozo y'umwihariko ihabwa abanyeshuri bihuta cyane mu myigire kurusha abandi n'ibisubizo byayo

Fata terefone wifotore ukore ibi bikurikira:

- Ifata amajwi
- Andikamo inomeru ya terefone ya mwarimu wawe
- Hamagara ababyeyi bawe
- Oherereza ubutumwa bugufi mugenzi wawe
- Oherereza mugenzi wawe amafaranga ukoresheje "MTN Mobile Money"
- Gura umuriro uwushyire muri "Cash Power" y'iwanyu.

UMUTWE WA GATATU: INSHUTI YANGE MUDASOBWA

(Urupapuro rwa 51 – 82 mu gitabo cy'umunyeshuri)

3.1 Ubushobozi bw'ingenzi bugamijwe

Kunozwa imyandikire muri "Typing Turtle" na "Write Activity", gufata amafoto no gufata amajwi muri "Record Activity".

3.2 Ibyizwe mbere bifatanye isano n'uyu mutwe

- Mwandikisho (Keyboard) ya terefoni
- Kwandika ubutumwa bugufi ukoresheje terefoni
- Gufata ifoto ukoresheje terefoni
- Gufata amajwi ukoresheje terefoni

3.3 Ubumenyi ku ngingo nsanganyamasomo buri muri uyu mutwe n'uko bugerwaho

- *Ubwuzuzanye bw'ibitsina byombi* mu gukora ibikorwa nta vangura.
- *Uburezi budaheza* mu gihe adahutaza abo bigana bafite ubumuga cyangwa ibindi bibazo byihariye.
- *Gufata neza ibidukikije* mu gihe asukura aho akorera cyangwa afata neza imfashanyigisho yakoresheje .
- *Umuco w'amahoro* mu gihe akorana na bagenzi be mu bwumvikane ntawe abangamiye.
- *Umuco wo gukoresha neza umutungo* igihe agaragaza inshingano ze mu gukoresha mudasobwa yandika, afata amafoto, amashusho n'amajwi.
- *Umuco wo gukoresha ibyujije ubuziranenge* mu gihe akoresha mudasobwa itangiza ubuzima bwe cyangwa ihumanya ikirere.
- *Ubuzima bw'imyororokere* mu gihe akoresha mudasobwa neza adata umwanya areba ibintu by'urukozasoni ku mbuga nkoranyambaga zitandukanye.
- *Kurwanya jenocide n'ingengabitekerezo* yayo igihe adata umwanya yandika inyandiko zipfobya cyangwa zihakana jenocide yakorewe abatutsi cyangwa yifashisha mudasobwa mu gukora ibindi byaha nk'ubujura, ubuhezanguni, ...

3.4 Ubushobozi umunyeshuri azunguka muri uyu mutwe

- Kwitegereza agasobanura ibyo yitegereje kandi akabyigana

Ingero:

- Kwitegereza ibice bya mwandikisho (Keyboard) ya mudasobwa "XO" akabisobanura

- Kwitegereza amashusho yerekana uko bakoresha mudasowa "XO" akabyigana,
- **Gushyikirana n’abandi** igihe akorera mu matsinda cyangwa afatany n’abandi kuko akenshi mudasobwa bakoresha zishobora kuba nke, ntiyikubira wenyine, aha n’abandi urubuga bakayitegereza kandi bakayikoresha.
- **Gutekereza byimbitse** ku bikorwa asabwa gukora yifashishije mudasobwa "XO", bityo akabikora neza atibeshya.

Urugero : Kwifata amajwi n’amashusho ari kuririmbana na bagenzi be.

- **Gukoresha imvugo isobanutse** igihe asobanura ibyo yakoze yifashishije mudasobwa "XO".

Urugero: Bavuga gufata amajwi , ntibavuga kurikodinga

- **Guhanga udushya** mu gihe acukumbura kandi akabasha gukora ibirenze ibyo yize

Urugero:

- Gukoresha mudasobwa "XO" akayikoresha afata amajwi n’amashusho y’ikiganiro gikorera mu itsinda arimo.
- Kumenya kubara no gukoresha imibare igihe akoresha mubazi iri muri mudasobwa ye.
- **Kugira amashyushyu** yo guhora yiyungura ubumenyi mu gukoresha mudasobwa z’amoko atandukanye kandi mu buryo bunoze.
- **Kwikemurira ibibazo** mu gihe yifashisha mudasobwa mu kwikemurira ibibazo. **Urugero:** Nko kwifotora ifoto yifotoye akayihanaguza bakazayishyira kuri mituweri ye.
- **Gushakashaka no kuvumbura** ibindi yakwifashisha mu ikoranabuhanga akoresheje mudasobwa.

Urugero: Gukoresha mudasobwa akareba amakuru, ibiri ku mbuga nkoranyambaga, gukoresha inkoranya, ...

3.5 Amagambo umunyeshuri yunguka muri uyu mutwe

Kunoza inyandiko: Kwandika neza

"typing turtle": Porogaramu ifasha kwandika iri muri mudasobwa "XO"

Write activity: Porogaramu ifasha kwandika iri muri mudasobwa "XO".

Record activity: Porogaramu yo gufata amajwi n’amashusho.

3.6 Ikibazo nyamukuru

- Umwarimu asomesha agakuru kajyanye n’ikibazo cy’umunyeshuri wahembwe mudasobwa atazi kuyikoresha .
- Asaba abanyeshuri kukaganiraho no kugatangaho ibitekerezo bagaragaza icyo

uwo munyeshuri yafashwa gusobanukirwa kugira ngo icyo kibazo gikemuke.

- Abasobanurira ko ibisubizo nyabyo kandi byuzuye bazajya babibona mu masomo bagiye kwiga muri uyu mutwe.

3.7 Uko umwarimu yita by'umwihariko ku bafite ibibazo byihariye yigisha uyu mutwe

- Abagenda buhoro mu myigire yabo abaha ibikorwa byabateganyirijwe usanga muri iki gitabo.
- Abafite ubumuga bw'ingingo banza umenye izo ari zo ubategurire imfashanyigisho zihariye n'imyitozo wagenere buri wese bibafasha gukoresha neza terefoni.
- Abafite impano yo kumva no gukora vuba cyane bahe ibikorwa bituma bacukumbura isomo usanga muri iki gitabo.

3.8 Ibyigwa biri muri uyu mutwe wa 3

| | Urutonde rw'ibygwa | Umubare w'amasomo "periods": 7 |
|---|--|--------------------------------|
| 1 | Porogaramu yo gukoresha mwandikisho (Keyboard) | 1 |
| 2 | Porogaramu ya "Typing Turtle" | 1 |
| 3 | Porogaramu ya "Write Activity" | 2 |
| 4 | Porogaramu ya "Record Activity" | 2 |
| 5 | Isuzuma risoza umutwe wa 3 | 1 |

3.9 Imyigishirize ya buri somo

3.9.1 Isomo rya 1: Porogaramu yo gukoresha mwandikisho (Keyboard)

a. Intego

Ubumenyi:

Kurondora ibice bigize mwandikisho (Keyboard) ya mudasobwa "XO"

Ubumenyigiro:

- Gukoresha mwandikisho (Keyboard) mu kwandika imibare, inyuguti n'ibimenyetso byihariye.

Ubukeshya:

- Kugaragaza ubushake bwo gukoresha mudasobwa "XO"
- Kwishimira kwandika akoresheje mudasobwa
- Kugira amatsiko yo gukoresha mwandikisho (Keyboard)
- Kurushaho gukunda gukoresha ikoranabuhanga rya mudasobwa "XO"

b. Imyitozo y’isubiramo /Intangiriro

Ibice bigize mwandikisho (Keyboard) ya terefoni

c. Imfashanyigisho

Mudasobwa "XO" n’amashusho yerekana ibice bigize mwandikisho (Keyboard) ya mudasobwa "XO"

d. Ibikorwa by’imyigire n’imyigishirize

- Gutegura imfashanyigisho zihagije zituma umunyeshuri amenya ibice bigize mwandikisho (Keyboard) ya mudasobwa "XO"
- Guha abanyeshuri amabwiriza akwiye gukurikizwa igihe bakora ibikorwa byo kwitegereza mwandikisho (Keyboard) ya mudasobwa "XO".
- Umwarimu yuzuzwa ibitekerezo by’abanyeshuri igihe hari ibyo basobanura bitegereje ku mashusho akabafasha kubikora mu mvugo isobanutse, batajijinganya cyangwa ngo barye iminwa.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. **Urugero:** Mwandikisho (Keyboard) ya mudasobwa "XO" igizwe n'ibihe bice?

Mwandikisho (Keyboard) ya mudasobwa "XO" igizwe n'ibice bitatu ari byo:

- Igice k'imibare gifasha kwandika imibare muri porogaramu za mudasobwa "XO" zitandukanye.
- Igice k'inyuguti gifasha kwandika inyuguti zitandukanye muri mudasobwa "XO".
- Igice k'ibimenyetso byihariye gifasha kunoza inyandiko no gushyira ibimenyetso bitandukanye muri porogaramu ya mudasobwa "XO".

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy’umunyeshuri byo gusobanura akamaro ka buri gice kiba kuri mwandikisho (Keyboard) ya mudasobwa "XO".

3.9.2 Isomo rya 2: Porogaramu ya "Typing Turtle"

a. Intego

Ubumenyi:

Kurondora uko binjira muri porogaramu ya "Typing Turtle"

Ubumenyigiro:

Gufungura porogaramu ya "Typing Turtle"

Ubukeshya:

- Kugaragaza ubushake bwo gukoresha mudasobwa

- Kwishimira kwandika akoresheje mudasobwa
- Kurushaho gukunda gukoresha ikoranabuhanga rya mudasobwa.

b. Imyitozo y’isubiramo /Intangiriro

Ibice bigize mwandikisho (Keyboard) ya mudasobwa "XO"

c. Imfashanyigisho

Mudasobwa "XO" n’amashusho yerekana ibice bigize mwandikisho (Keyboard) ya mudasobwa "XO"

d. Ibikorwa by’imyigire n’imyigishirize

- Tegura imfashanyigisho zihagije zituma umunyeshuri amenya ibijyanye na porogaramu ya "Typing Turtle".
- Ha abanyeshuri amabwiriza akwiye gukurikizwa igihe bakora ibikorwa byo kwitegereza uko bafungura porogaramu ya "typing turtle" no gusobanura uko bikorwa.
- Yobora abanyeshuri mu bikorwa byo kubwira abandi ibyo bagezeho mu byo bakoreye mu matsinda no mu bushakashatsi bakoze.
- Uzuzza ibitekerezo by’abanyeshuri ubikorera ubugororangingo igihe basobanura uburyo bubonye bwo gukoresha porogaramu ya "typing turtle" iri muri mudasobwa "XO".

e. Umwanzuro w’isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. **Urugero:** Ukora ibiki ngo ufungure porogaramu ya "Typing Turtle" ya mudasobwa "XO" ?

Iyo ufungura porogaramu ya "Typing Turtle" ya mudasobwa "XO" ukora ibi bikurikira:

1. Gufungura mudasobwa yawe
2. Kujya kuri "Home View"
3. Gukanda ku gashusho ka "Typing Turtle"
4. Gukanda kuri "Start Lesson"
5. Gutangira kwandika.

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy’umunyeshuri byo gukoresha porogaramu ya "Typing Turtle".

3.9.3 Isomo rya 3: Porogaramu ya "Write Activity"

a. Intego

Ubumenyi

- Kumenya ibice bya "Text Editor" muri "Write Activity" ya "XO"

- Kumenya inzira zifashishwa mu guhindura ingano, amabara, ubwoko bw'inyandiko no guca imirongo ku ijambo.
- Kumenya ibimenyetso by'ingenzi bya mwandikisho (Keyboard) ya "XO" bikoreshwa muri "Write Activity".

Ubumenyigiro:

- Gutandukanya igice kinoza inyandiko n'icyandikwaho muri "Write Activity" program
- Guhindura ingano, amabara, ubwoko bw'inyandiko, guca imirongo ku ijambo.

Ubukeshya:

- Kugaragaza ubushake bwo gukoresha mudasobwa
- Kwishimira kwandika akoresheje mudasobwa
- Kugira amatsiko yo gukoresha igice kinoza inyandiko n'icyandikirwaho
- Kurushaho kukunda gukoresha ikoranabuhanga rya mudasobwa

b. Imyitozo y'isubiramo /Intangiro

Porogaramu ya "Typing Turtle Activity"

c. Imfashanyigisho

Mudasobwa "XO" n'amashusho yerekana ibice bigize mwandikisho (Keyboard) ya mudasobwa "XO".

d. Ibikorwa by'imyigire n'imyigishirize

- Gutegura imfashanyigisho zihagije zituma umunyeshuri amenya gukoresha neza porogaramu ya "Write Activity".
- Guha abanyeshuri amabwiriza akwiye gukurikizwa igihe bakora ibikorwa byo kwitegereza uko bafungura porogaramu ya "Write Activity".
- Guha buri munyeshuri umwanya wo gutanga ibitekerezo bye cyangwa wo kugira icyo avuga ku bitekerezo by'abandi.
- Yuzuzanya ibitekerezo byabo igihe hari ibyo basobanura kugira ngo bakoreshe imvugo isobanutse, batajijinganya cyangwa ngo barye iminwa.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. **Urugero:** Porogaramu ya "Write Activity" kuri mudasobwa "XO" igizwe n'ibihe bice?

Porogaramu ya "Write Activity" kuri mudasobwa "XO" igizwe n'ibice bikurikira:

- Amazina y'ibikorwa (Activity names)
- Gusaranganya (Share with)
- Kubigumana (Keep)

- Guhagarara (Stop)
- "Menu" iriho activity, edit, table, format, na view.

Ibice binoza inyandiko muri "Write Activity" ni:

- Ibitsindagira : **B**
- Ibiberamye : *I*
- Ibiciyeho umurongo: U
- Ibirimo amabara: ●
- Ibihindura ingano: 12

Iyo wandika ukoresheje mwandikisho (Keyboard) ibyo wandika bijya kuri "screen" ya mudasobwa yawe

Iyo ushaka kwandika inyuguti nkuru ukanda "button" ya "shift" maze ugakanda inyuguti ushaka kwandika utarekuye shift.

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy'umunyeshuri byo kunoza imyandikire ukoresheje mudasobwa "xo".

3.9.4 Isomo rya 4: Porogaramu ya "Record Activity"

a. Intego

Ubumenyi:

Kumenya gufotora, gufata amajwi n'amashusho.

Ubumenyigiro:

- Gutandukanya ibice bya mudasobwa bifotora, n'ibifata amajwi n'amashusho.
- Gusobanura uburyo amafoto, amajwi na "video" bifatwa.

Ubukasha:

- Kugaragaza ubushake bwo gukoresha mudasobwa
- Kwishimira kwandika akoresheje mudasobwa
- Kugira amatsiko yo gukoresha igice kinoza inyandiko n'icyandikirwaho
- Kunezezwa no kwifotora no gufotora abandi

b. Imyitozo y'isubiramo /Intangiro

Porogaramu ya Write Activity.

c. Imfashanyigisho

Mudasobwa "XO" n'amashusho yerekana ibice bigize mwandikisho (Keyboard) ya mudasobwa "XO".

d. Ibikorwa by'imyigire n'imyigishirize

- Tegura imfashanyigisho zihagije zituma umunyeshuri amenya uko porogaramu ya Record Activity ikoreshejwe mudasobwa "XO".

- Ha abanyeshuri amabwiriza akwiye gukurikizwa igihe bakora ibikorwa byo kwitegereza uko bafata amafoto n'uko bafata amajwi bakoresheje porogaramu ya mudasobwa "XO".
- Ha buri munyeshuri umwanya wo gutanga ibitekerezo bye cyangwa wo kugira icyo avuga ku bitekerezo by'abandi hagamijwe kungurana ibitekerezo ku buryo basiba amafoto n'amajwi byafashwe.
- Uzuzwa ibitekerezo by'abanyeshuri igihe basobanura uko babika ifoto cyangwa amajwi bafashe, akabafasha kubikora mu mvugo isobanutse, batajijinganya cyangwa ngo barye iminwa.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. *Urugero:* Iyo ushaka gufata ifoto, amajwi n'amashusho ukoresheje mudasobwa "XO" ubigenza ute?

1. Gufata ifoto ukoresheje mudasobwa "XO" ukurikiza izi ntambwe:
 - a. Ukanda "Record Activity" kuri Home View
 - b. Ugakanda "photo"
 - c. Kureba ko icyo ushaka gufotora uri kukireba neza
 - d. Gukanda kuri "button" yo gufotora
2. Gufata amajwi ukoresheje mudasobwa "xo" ukurikiza izi ntambwe:
 - Gufungura porogaramu ya Record Activity
 - Gukanda "Audio"
 - Gukanda kuri "button" yo gufata amajwi
 - Kongera gukanda kuri "button" yo gufata amajwi kugira ngo ubihagarike
3. Gufata amajwi n'amashusho ukoresheje mudasobwa "XO" ukurikiza izi ntambwe:
 - Kanda ahafata amajwi n'amashusho
 - Reba niba bitunganye kuri "screen"
 - Fata amajwi n'amashusho
 - Reba igihe bimara nusoza ubihagarike
 - Reba ibyo wafashe

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy'umunyeshuri ku gufata amajwi n'amashusho hifashishijwe mudasobwa "XO" .

3.10 Ibisozwa umutwe

a. Inshamake y'ibikubiye muri uyu mutwe

- Ibice bya keyboard ya mudasobwa ("XO"): Imibare, inyuguti n'ibimenyetso byihariye.

- Porogaramu ya "Typing Turtle"
- Porogaramu ya "Write Activity"
- Porogaramu ya "Record Activity".

b. Ubumenyi bw'inyongera umwarimu asabwa kugira

- Ni byiza kwimenyereza gukoresha mudasobwa ya "XO" no kwikoresha imyitoto ihagije ijyanye n'isomo uzigisha mbere yo kuritanga.
- Mbere yo gutanga isomo genzura mudasobwa uzakoresha kugira ngo umenye ko zose ari nzima kandi zikora neza.
- Suzuma niba nta bintu byarangaza abanyeshuri byaba biri muri mudasobwa uzakoresha. Nuramuka usanze birimo ubisibe mbere y'uko bazikoresha.

c. Ibisubizo by'isuzuna risoza umutwe wa 3 ku rupapuro rwa 82 mu gitabo cy'umunyeshuri.

1. Inkuru yanditse neza muri "Write Activity"
2. "Video" yerekana umunyeshuri uririmba indirimbo "Rwanda nziza".
3. Ububiko bw'amafoto muri mudasobwa budafite ifoto y'uwo muni.
4. Amagambo n'inyuguti zanditse neza muri "Typing Turtle".
5. "Video" yerekana uko buri munyeshuri yifashe amajwi n'amashusho.
6. Buri munyeshuri abike indirimbo mu bubiko bwa mudasobwa XO.

d. Imyitoto y'umwihariko ihabwa abanyeshuri bagenda buhoro mu myigire n'ibisubizo byayo

Koresha mudasobwa "XO Laptop" wandike iyi nteruro: "Ababyeyi bange barankunda".

a. Yandike iberamye. b. Yandike uyitsindagira

Ibisubizo

Ibisubizo biranyuranye kuko biterwa n'imikorere ya buri munyeshuri

e. Imyitoto y'umwihariko ihabwa abanyeshuri bihuta cyane mu myigire kurusha abandi n'ibisubizo byayo

Fata mudasobwa "XO Laptop" ukore ibi bikurikira:

- a. Ifate ifoto b. Ifate amajwi c. Ita izina ibyo wafashe
d. Bibike muri mudasobwa yawe

Ibisubizo: Ibisubizo biranyuranye kuko biterwa n'ibyo umunyeshuri yahisemo gukora.

UMUTWE WA 4: AMAZI

(Urupapuro rwa 83 – 86 mu gitabo cy'umunyeshuri)

4.1 Ubushobozi bw'ingenzi bugamijwe

Gushobora gutegura no kubika amazi yo kunywa

4.2 Ibyizwe mbere bifatanye isano n'uyu mutwe

- Amasoko y'amazi n'akamaro k'amazi
- Ibikoresho byo mu rugo n'isukurwa ryabo.

4.3 Ubumenyi ku ngingo nsanganyamasomo buri muri uyu mutwe n'uko bugerwaho

- *Ubwuzuzanye bw'ibitsina byombi* mu gihe abana b'abakobwa n'abahungu bafatanyaga mu gukora ibikorwa bikurikira: Guteka amazi yo kunywa no gusukura amazi yo kunywa ukoresheje imiti.
- *Gufata neza ibidukikije* mu gihe abanyeshuri birinda kwanduza aho bakoreye ibikorwa byo guteka amazi yo kunywa no gusukura amazi yo kunywa bakoresheje imiti bakahasiga nk'uko bahasanze.
- *Umuco w'amahoro* mu gihe buri munyeshuri akorana na bagenzi be mu bwumvikane ntawubangamiye undi.
- *Umuco wo gukoresha neza umutungo* igihe akoresha neza ibikoresho yifashisha mu guteka amazi yo kunywa no mu gusukura amazi yo kunywa akoresheje imiti.
- *Umuco wo gukoresha ibyujije ubuziranenge* mu gihe akoresha umuti wa sur'eau utararengeje igihe.

4.4 Ubushobozi umunyeshuri azunguka muri uyu mutwe

- **Kwitegereza** agasobanura ibyo yitegereje kandi akabyigana

Urugero:

- Kwitegereza amashusho yerekana intambwe zikurikizwa iyo bateka amazi yo kunywa.
- Kwitegereza amashusho yerekana intambwe zikurikizwa iyo basukura amazi yo kunywa bakoresheje imiti.
- **Gushyikirana n'abandi** igihe akorera mu matsinda cyangwa afatanyaga n'abandi; igihe ibikoresho bikoreshwa mu guteka amazi yo kunywa no mu gusukura amazi yo kunywa ukoresheje imiti ari bike.
- **Gutekereza byimbitse** ku bikorwa byo guteka amazi yo kunywa, gusukura amazi yo kunywa no kuyungurura amazi asabwa gukora, bityo akabikora neza atibeshya.

Urugero:

- Intambwe zikurikizwa iyo bateka amazi yo kunywa, basukura amazi yo kunywa cyangwa bayungurura amazi yo kunywa bakoresheje imiti.
- **Gukoresha imvugo isobanutse** igihe asobanura intambwe zo guteka amazi yo kunywa no gusukura amazi yo kunywa bakoresheje imiti.
- **Kwikemurira ibibazo** mu gihe atunganya ubwe amazi yo kunywa.
- **Gushakashaka no kuvumbura ibindi** yakwifashishwa mu guteka amazi yo kunywa no gusukura amazi yo kunywa hakoreshejwe imiti.

4.5 Amagambo umunyeshuri yunguka muri uyu mutwe

Amazi y'ibiziba: Amazi asa nabi kubera itaka ryagiye

Amazi meza: Amazi atagira ibara, atagira icyanga,...

Amazi y'ibirohwa: amazi arimo utwanda duto twinshi

Guserura: Kubira kw'amazi

Gucayuka: Kwikeneka kw'amazi imyanda ikajya hasi

Sur'eau: Umuti wica mikorobi zo mu mazi akaba meza kandi akanyobwa.

Firitiri: Igikoresho kiyungurura amazi yo kunywa.

4.6 Ikibazo nyamukuru

- Umwarimu asomesha agakuru kajyanye n'ikibazo cy'umuryango uhora urwaye kubera kunywa amazi mabi.
- Asaba abanyeshuri kukaganiraho no kugatangaho ibitekerezo bagaragaza icyo bakora ngo uwo muryango ubashe kwitegurira amazi meza yabafasha kwirinda indwara
- Abasobanurira ko ibisubizo nyabyo bazajya babibona mu masomo bagiye kwiga muri uyu mutwe.

4.7 Uko umwarimu yita by'umwihariko ku bafite ibibazo byihariye yigisha uyu mutwe

- Abagenda buhoro mu myigire yabo bahe ibikorwa byabateganyirijwe usanga muri iki gitabo .
- Abafite ubumuga bw'ingingo umwarimu banza umenye izo ari zo ubategurire imfashanyigisho zihariye n'ibikorwa yagera buri wese bijyanye no gutegura no kubika amazi yo kunywa.
- Abafite impano yo kumva no gukora vuba cyane ibikorwa bituma bacukumbura isomo usanga muri iki gitabo.

4.8 Ibyigwa biri muri uyu mutwe wa kane

| | Urutonde rw'ibygwa | Umubare w'amasomo (periods): 3 |
|---|---|--------------------------------|
| 1 | Guteka amazi yo kunywa | 1 |
| 2 | Gusukura amazi yo kunywa ukoresheje imiti | 1 |
| 3 | Isuzuma risoza umutwe wa kane | 1 |

4.9. Imyigishirize ya buri kigwa

4.9.1 Isomo rya mbere: Guteka, kuyungurura no kubika neza amazi yo kunywa

a. Intego

Ubumenyi:

- Gusobanura uburyo bwo guteka amazi yo kunywa
- Gusobanura uburyo bwo kubika amazi yo kunywa.

Ubumenyigiro:

- Guteka/ gutegura amazi agomba kunyobwa
- Gusukura neza uko bikwiye ibikoresho bijyamo amazi

Ubukeshya:

- Kugira akamenyero ko kunywa amazi asukuye
- Kugira akamenyero ko kubika neza amazi yo kunywa

b. Imyitozo y'isubiramo /Intangiriro

Kubaza abanyeshuri ibibazo byerekeye amoko y'amazi no gusobanura uburyo bwo kwirinda ingaruka z'amazi mabi.

c. Imfashanyigisho

Ibikoresho byifashishwa mu guteka amazi nk'isafuriya, akayunguruzo, imbabura, akajerikani, amazi,...

d. Ibikorwa by'imyigire n'imyigishirize

- Umwarimu ategura imfashanyigisho zihagije zituma umunyeshuri amenya ibyiciro byo guteka amazi.
- Ayobora abanyeshuri bateka amazi mu matsinda bayobowe n'umwarimu mu rwego rwo kubarinda impanuka zaterwa no kotswa n'amazi batetse.
- Umwarimu aha abanyeshuri amabwiriza akwiye gukurikizwa igihe bakora ibikorwa byo kwitegereza amashusho agaragaza uburyo buboneye bwo guteka amazi yo kunywa, gushakashaka no gusobanura ibyo bitegereje.
- Umwarimu yuzuye ibitekerezo by'abanyeshuri igihe hari ibyo basobanura bituzuye cyangwa bitumvikana neza, akabafasha kubikorera ubugororangingo bityo bakamenyera gukoresha imvugo isobanutse.

Urugero: Gusobanura ibiranga amazi yabize

- Umwarimu yunganira abafite ibibazo mu guteka amazi yo kunywa nk'uko babisabwe ku buryo buri wese abyikorera neza kandi yihuse.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. **Urugero:** Guteka amazi yo kunywa bikorwa bite?

Mbere yo guteka amazi ngomba kubanza gukaraba intoki, nkoza ibikoresho (isafuriya, akayunguruzo, imbabura, akajerikani) byose ndibukenere hanyuma nkayateka nkurikije inzira zose zerekanwe ku mashusho.

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy'umunyeshuri byo guteka amazi yo kunywa.

4.9.2 Isomo rya kabiri: Gusukura amazi yo kunywa ukoresheje imiti

a. Intego

Ubumenyi:

- Gusobanura uburyo bwo gusukura amazi yo kunywa ukoresheje imiti
- Gusobanura uburyo bwo kubika amazi yo kunywa

Ubumenyigiro:

- Gushyira mu mazi umuti uyasukura no kubika amazi atetse
- Gusukura neza uko bikwiye ibikoresho bijyamo amazi

Ubukeshya:

- Kugira akamenyero ko kunywa amazi asukuye
- Kugira akamenyero ko kubika neza amazi yo kunywa

b. Imyitozo y'isubiramo /Intangiriro

Kwitegereza amashusho ariho inzira zo gusukura amazi yo kunywa hakoreshejwe imiti no gusubiza ibibazo bijyanye n'ayo mashusho.

c. Imfashanyigisho

Ibikoresho byifashishwa mu gusukura amazi yo kunywa nk'akajerikani, akayunguruzo, amazi mabi, umubirikira,...

d. Ibikorwa by'imyigire n'imyigishirize

- Umwarimu ategura imfashanyigisho zihagije zituma umunyeshuri amenya intambwe zo gusukura amazi hakoreshejwe imiti.
- Umwarimu ayobora abanyeshuri igihe bakora igikorwa cyo gusukura amazi hakoreshejwe imiti gikorwa mu matsinda mu rwego rwo kubarinda kwangiza imiti bakoresha, gukoresha umuti mwinshi no kunywa amazi bakimara gushyiramo umuti batabanje gucugusa no gutegereza iminota 30.

- Umwarimu aha abanyeshuri amabwiriza akwiye gukurikizwa igihe bakora ibikorwa byo kwitegereza amashusho agaragaza uburyo buboneye bwo gusukura amazi yo kunywa hakoreshejwe imiti, gushakashaka no gusobanura ibyo bitegereje..
- Umwarimu yuzuzura ibitekerezo by’abanyeshuri igihe hari ibyo basobanura bituzuye cyangwa bitumvikana neza, akabafasha kubikorera ubugororangingo bityo bakamenyera gukoresha imvugo isobanutse.
- Umwarimu yunganira abafite ibibazo mu gusukura amazi yo kunywa bakoresheje imiti n'uko babisabwe ku buryo buri wese abyikorera neza kandi yihuse.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. **Urugero:** Gusukura amazi yo kunywa ukoresheje imiti bikorwa bite?

Mbere yo gusukura amazi yo kunywa ukoresheje imiti ngomba kubanza gukaraba intoki, nkoza ibikoresho (akayunguruzo, akajerikani, umubirikira,...) ndi bukenere hanyuma nkayasukura nkurikije inzira zose zerekanwe ku mashusho.

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy’umunyeshuri byo gusukura amazi yo kunywa bakoresheje imiti.

4.10 Gusozwa umutwe

a. Inshamake y’ibikubiye muri uyu mutwe

Uburyo bwo guteka amazi yo kunywa, gusukura amazi yo kunywa hakoreshejwe imiti n’uburyo bwo kuyungurura amazi yo kunywa hakoreshejwe firitiri .

Uburyo bwo kubika amazi yo kunywa yatetswe , yasukuwe hakoreshejwe imiti n’ayayunguruwe hakoreshejwe firitiri.

b. Ubumenyi bw’inyongera umwarimu asabwa kugira

Mbere yo kwigisha gutegura no kubika amazi yo kunywa ita kuri ibi bikurikira:

- Jya mu maguriro y’imiti ubaze inzobere imiti ikoreshwa mu gusukura amazi n’uko ikoreshwa.
- Tegura urugendoshuri rwo gusukura ahantu hayungururirwa amazi hari hafi y’ikigo ishuri rihereyemo.
- Igihe cyose uzaba uri kwigisha gutegura no kubika amazi yo kunywa ba hafi abanyeshuri kugira ngo batotswe n’amazi batetse, batangiza cyangwa ngo barye imiti bakoreshe mu gusukura amazi, badakomeretswa n’ibikoresho byifashishwa mu guteka amazi.

c. Ibisubizo by'isuzuma risoza umutwe wa 4 riri ku rupapuro rwa 86 mu gitabo cy'umunyeshuri

1. – Gupima umuti uri bukoreshe
– Gushyiramo umuti wa siro wapimye
– Gucugusa wa muti uwuvanga n'amazi
– Gupfundikira akajerikani ugategereza iminota 30
– Kunywa amazi wasukuye ukoresheje siro.
2. – Korera, impiswi, inzoka, tifoide, macinyamyambi n'izindi.
3. Sur'eau (siro)
4. – Guteka amazi
– Kubika neza amazi yo kunywa
– Kuyungurura amazi
5. – Kugira ngo bice udukoko twatera indwara
– Gusukura ibikoresho uri bukenere
– Kuyateka apfundikiye akabira neza
– Kuyatereka akaba akazuyazi
– Kuyayunguruza akayunguruzo gasukuye
– Kuyabika apfundikiye mu gikoresho gisukuye
6. e c d f a b
7. Isafuriya n'umufuniko wayo, akayunguruzo, igikoresho cyo kuyabikamo, ibicanwa, igikombe...

d. Ibikorwa by'umwihariko bihabwa abanyeshuri bagenda buhoro mu myigire n'ibisubizo byayo

1. Vuga uko amazi yo kunywa agomba kuba ameze.
2. Ubonye umuntu agiye kunywa amazi mabi, wamugira iyihe nama?

Ibisubizo:

1. – Ni amazi atetse ayunguruye, kandi abikanwe isuku.
– Ni amazi arimo umuti wa sur'eau (siro) ayunguruye abikanwe isuku.
2. – Namugira inama yo kubireka, kuko amazi mabi atera indwara, ahubwo akajya anywa amazi atetse.

e. Ibikorwa by'umwihariko bihabwa abanyeshuri bihuta cyane mu myigire kurusha abandi n'ibisubizo byayo

1. Voma amazi uyasukure ukoresheje umuti wa sur'eau (siro)
2. Fata amazi atobamye ushyiremo umuti wa sur'eau (siro) uvuge uko bigenda.
3. Gereranya amazi yo mu gikorwa cya mbere n'icya kabiri.

Igisubizo: Sur'eau (siro) yagenewe gushyirwa mu mazi asa neza, adatobamye.

UMUTWE WA 5: UBUTAKA

(Urupapuro rwa 87 – 92 mu gitabo cy'umunyeshuri)

5.1 Ubushobozi bw'ingenzi bugamijwe

Gutandukanya amoko y'ubutaka, amoko y'isuri n'uburyo bwo kurinda ubutaka isuri.

5.2 Ibyizwe mbere bifitanye isano n'uyu mutwe

Amoko y'ubutaka, ibyangiza ubutaka, ibyiza n'ibibi by'amazi ku butaka.

5.3 Ubumenyi ku ngingo nsanganyamasomo buri muri uyu mutwe n'uko bugerwaho.

- *Uburiganire n'ubwuzuzanye* bw'abahungu n'abakobwa bugerwaho mu gukora ibikorwa byose nta vangura .
- *Uburezi budaheza* mu gihe abanyeshuri bose bigana kandi bafatanyaga mu bikorwa binyurwanye n'abafite ibibazo byihariye.
- *Gufata neza ibidukikije* bigerwaho mu gihe abanyeshuri bamenya neza amoko anyuranye y'ubutaka n'ukuntu bayarinda ibyabwangiza.
Bigerwaho kandi mu gihe umunyeshuri ashakisha amoko y'ubutaka agenda ayora ahantu hatandukanye yirinda kugira ibyo yangiza byaba biteye ku butaka.
- *Umuco wo gukoresha neza umutungo* igihe asobanura ko gufata neza ubutaka bifite akamaro kuko ari umutungo ufiteye akamaro abantu n'Igihugu.

5.4 Ubushobozi umunyeshuri azunguka muri uyu mutwe

- *Kwitegereza* igihe yitegereza neza amashusho n'izindi mfashanyigisho agasobanura neza amoko y'ubutaka n'uburyo bwo kuburinda isuri.
- *Gushyikirana n'abandi* igihe akorera mu matsinda cyangwa afatanyaga n'abandi mu kwitegereza ubutaka, kubukorakoraho no kubugereranya.
- *Gukoresha imvugo isobanutse* igihe akoresha imvugo isobanura amoko y'ubutaka n'uko baburinda isuri.
- *Kugira amashyushyu* yo guhora yiyungura ubumenyi mu birebana n'imiterere y'ubutaka bw'ahantu hatandukanye n'ibindi bijyanye n'isuri cyangwa uko bayirwanya.
- *Kwikemurira ibibazo* mu gihe arwanya isuri aho atuye n'aho yiga.

5.5 Amagambo umunyeshuri yunguka muri uyu mutwe

Serwakira: Umuyaga uhuha cyane ugatumbagiza umukungugu mu kirere

Amaterasi y'indinganire: Amaterasi mato agiye aringaniye ku butaka buhanamye

Amaterasi asanzwe: Amaterasi magari atandukanijwe n'imiringoti

Isuri: Itwarwa ry'ubutaka bitewe n'imvura cyangwa umuyaga

Imikoki: Ibinogo birebire biza ku misozi biterwa n'isuri

5.6 Ikibazo nyamukuru

- Umwarimu asomesha agakuru kajyanye n'ikibazo cy'umuryango uHINGA ntiweze kabone n'iyi bafumbira bingana iki.
- Asaba abanyeshuri kukaganiraho no kugatangaho ibitekerezo bagaragaza icyo uwo muryango ugomba gusobanukirwa kijyanye n'ubutaka kugira ngo bakemure icyo kibazo.
- Abasobanurira ko ibisubizo nyabyo bazajya babibona mu masomo bagiye kwiga muri uyu mutwe.

5.7 Uko umwarimu yita by'umwihariko ku bafite ibibazo byihariye yigisha uyu mutwe

- Abafata bitinze cyangwa bakora buhoro bategurire ibikorwa usanga muri iki gitabo; byoroshye ugereranyije n'iby'abandi.
- Abafite ubumuga bw'ingingo banza umenye izo ari zo ubategurire imfashanyigisho zihariye n'imyitozo wagenera buri wese .
- Abafite impano yo kumva no gukora vuba cyane bahe ibikorwa usanga muri iki gitabo, ituma batarangaza abandi.

5.8 Ibyigwa biri muri uyu mutwe wa 5

| | Urutonde rw'ibygwa | Umubare w'amasomo (periods): 10 |
|---|----------------------------------|---------------------------------|
| 1 | Amoko y'ubutaka | 2 |
| 2 | Amoko y'isuri | 2 |
| 3 | Ibitera isuri | 2 |
| 4 | Uburyo bwo kurinda ubutaka isuri | 2 |
| 5 | Isuzuma risoza umutwe | 2 |

5.9 Imyigishirize ya buri somo

5.9.1 Isomo rya mbere: Amoko y'ubutaka

a. Intego

Ubumenyi:

Kurondora amoko y'ubutaka

Ubumenyigiro:

Gutandukanya amoko y'ubutaka

Ubukeshu :

Kugaragaza uruhare mu kubungabunga ubutaka

b. Intangiriro

Kwitegeregereza amashusho agaragaza amoko y'ubutaka, gukorakora udutaka tw'imfashanyigisho tugaragaza amoko y'ubutaka no kubiganiraho.

c. Imfashanyigisho

Itaka ritandukanye, amashusho yerekana amoko y'ubutaka, imirima irimo ubutaka butandukanye.

d. Ibikorwa by'imyigire n'imyigishirize

- Umwarimu ategura imfashanyigisho zihagije zituma umunyeshuri amenya gutandukanya amoko y'ubutaka.
- Ayobora abanyeshuri igihe bakora ibikorwa mu matsinda byo kwitegereza no gukorakora ubutaka.
- Ategura kandi agaha abanyeshuri amabwiriza bakwiye gukurikiza igihe bakora ibikorwa byo kwitegereza , gukorakora ubutaka no kubutandukanya.
- Aha buri munyeshuri umwanya wo gukora ku giti ke
- Abafite ibyo bagenerwa byihariye mu myigire yabo; ababa hafi kandi akabaha gukora ibikorwa bafitiye ubushobozi. Byateganyijwe muri iki gitabo.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize.

Urugero: Ubutaka bubamo amoko angahe ?

Ubutaka bubamo amoko atatu y'ingenzi: Ubw'ibumba, ubw'urusenyi n'ubutaka bw'imberabyombi.

f. Isuzuma

Umwarimu aha abanyeshuri imyitozo iri mu gitabo cy'umunyeshuri ku moko y'ubutaka.

5.9.2 Isomo rya kabiri: Amoko y'isuri n'ibiyitera

a. Intego

Ubumenyi:

Kurondora no gusobanura amoko y'isuri n'ibiyitera

Ubumenyigiro:

Gutandukanya amoko y'isuri n'ibiyitera

Ubukeshu:

Kugaragaza uruhare mu kurwanya isuri ahadukikije

b. Intangiriro

Umwarimu asaba abanyeshuri kwitegereza amashusho agaragaza amoko y'isuri, gusura ahantu hafi y'ishuri hatwawe n'isuri no kubiganiraho.

c. Imfashanyigisho

Amashusho yerekana amoko y'isuri, amafoto y'ahantu hatwawe n'isuri cyangwa ahantu hafi y'ishuri hatwawe n'isuri, abanyeshuri bashobora gusura.

d. Ibikorwa by'imyigire n'imyigishirize

- Umwarimu ategura imfashanyigisho zihagije zituma umunyeshuri yitegereza akamenya gutandukanya amoko y'isuri n'ibiyitera.
- Ategura kandi agaha abanyeshuri amabwiriza bakwiye gukurikiza igihe bakora ibikorwa byo kwitegereza no gusobanura ibiranga amoko y'isuri n'ibiyitera .
- Aha buri munyeshuri umwanya wo gukora ku giti ke.
- Abafite ibyo bagenerwa byihariye mu myigire yabo; ababa hafi kandi akabaha gukora ibikorwa bafitiye ubushobozi byateganyijwe muri iki gitabo ndetse abakenera imfashanyigisho zihariye akazibategurira.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize.

Urugero: Isuri ishobora guterwa n'iki?

Isuri ishobora guterwa n'ibitonyanga by'imvura, umuyaga mwinshi cyangwa amazi y'imvura.

f. Isuzuma

Umwarimu aha abanyeshuri imyitozo iri mu gitabo cy'umunyeshuri ku moko y'isuri no ku bitera isuri.

g. Ibisubizo by'imyitozo kuri iki kigwa, iri mu gitabo cy'umunyeshuri ku rupapuro rwa 91

1. Isuri ni itwarwa ry'ubutaka riterwa n'amazi y'imvura, umuyaga cyangwa inkangu.
2. Kuko amatungo avanaho ibitwikiriye ubutaka bigatuma butwarwa n'isuri.
3. a. Amashyamba
b. Amatungo, ubutaka, umuyaga
c. Amashyamba

5.9.3 Isomo rya 3: Uburyo bwo kurinda ubutaka isuri

a. Intego

Ubumenyi:

Gusobanura uburyo butandukanye bwo kurwanya isuri

Ubumenyigiro:

Kurwanya no kurinda isuri ahakikije ishuri ryacu

Ubukasha:

Kugaragaza uruhare mu kurwanya isuri ahadukikije

b. Intangiriro

Umwarimu asaba abanyeshuri kwitegeregereza no kuganira ku mashusho agaragaza uko barwanya isuri. Aho bishoboka berekana amafoto y’umuganda aho barwanya isuri.

c. Imfashanyigisho

Amashusho yerekana uburyo butandukanye bwo kurwanya isuri, ibitiyo , amapiki, amasuka , ibyatsi byo gutera ku mirwanyasuri, amafoto, ahantu ho gusura.

d. Ibikorwa by’imyigire n’imyigishirize

- Umwarimu ategura imfashanyigisho zihagije zituma buri munyeshuri amenya gutandukanya uburyo bwo kurwanya isuri hakurikijwe uko ubutaka buteye.
- Ayobora abanyeshuri mu bikorwa byo kubwira no kumurikira abandi ibyo yabonye .
- Aha buri munyeshuri umwanya wo gukora ku giti ke kandi abakobwa n’abahungu bakora bimwe.
- Abafite ibyo bagenerwa byihariye mu myigire yabo; ababa hafi kandi akabaha gukora ibikorwa bafitiye ubushobozi ndetse akabaha n’imfashanyigisho zabo.

e. Umwanzuro w’isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize.

Urugero: Kurwanya isuri bikorwa bite?

Umuntu ashobora kurwanya isuri aca amaterasi y’indinganire, اساسira ubutaka, acukura imirwanyasuri akayiteraho ibyatsi, atera ibiti bibana n’imyaka, ahinga ku murongo, atera amashyamba kandi yororera mu biraro.

f. Isuzuma

Guha abanyeshuri imyitozo iri mu gitabo cy’umunyeshuri yo gutandukanya amoko y’isuri no gusobanura uburyo bwo kuyirinda.

5.10 Gusozwa umutwe

a. Ishamake y’ibikubiye muri uyu mutwe

- Amoko y’ubutaka aboneka mu gace ishuri riherereyemo.
- Amoko y’isuri yiganje mu gace ishuri riherereyemo.
- Uburyo bunyuranye bwo kurwanya isuri buboneka mu gace abanyeshuri bigamo n’aho batuye.

b. Ubumenyi bw'inyongera umwarimu asabwa kugira

- Mbere yo kwigisha uyu mutwe egera inzobere mu by'ubutaka muganire ku moko y'ubutaka buri mu gace ishuri riherereyemo.
- Gira amakuru ahagije ku hantu habaye inkangu cyangwa hatwawe n'isuri mu gace ishuri riherereyemo.
- Menya amoko yose y'ibyatsi n'ibiti bikoreshwa mu kurwanya isuri, uko bisa, uko biterwa n'aho wabikura mu gace kakwegereye.
- Menya uko bategura urugendoshuri rwo gusura ahantu barwanyije isuri n'ahandi hatwawe n'isuri.

c. Ibisubizo by'isuzuma risoza umutwe wa 5 riri ku rupapuro rwa 92 mu gitabo cy'umunyeshuri

- | | | |
|---------|---------|--------|
| a. Yego | d. Yego | g. Oya |
| b. Oya | e. Yego | h. Oya |
| c. Oya | f. Oya | |
- Setariya, urubingo, vetiveri, penisetumu, tiribusakumu,...
- Isuri yangiza ibiri ku butaka(Amazu, imihanda, ibihingwa)
- Inkangu: Aho ubutaka bwaridutse bitewe n'isuri
- Isuri iterwa n'imvura, isuri iterwa n'umuyaga, isuri iterwa n'umwuzure
- Gutera ibiti bivangwa n'imyaka, kororera mu biraro
- Gusasira imyaka bituma ubutaka budatwarwa n'isuri kandi ibihingwa bigahora bitoshye kuko ubutaka buhora buhehereye.
- Harimo urubingo, tiribusakumu.
- Ibisubizo bitandukana bitewe n'ibikorera mu gace buri munyeshuri atuyemo.

d. Ibikorwa by'umwihariko bihabwa abanyeshuri bagenda buhoro mu myigire n'ibisubizo byayo

Muge hafi y'ishuri muzane amoko atatu y'ubutaka muvuge ayo ari yo.

Ibisubizo: Biratandukanye bitewe n'ubutaka buboneka aho ishuri riri.

e. Ibikorwa by'umwihariko bihabwa abanyeshuri bihuta cyane mu myigire kurusha abandi n'ibisubizo byayo

- Vuga imirimo abantu bakora igira ingaruka ku butaka.
- Agace utuyemo gakoresha ubuhe buryo mu kurwanya isuri?

Ibisubizo:

- Kuragira amatungo ku gasozi, gutwika amashyamba, gutema ibiti bakabimaraho, n'ibindi.
- Ibisubizo biratandukanye bitewe n'aho abanyeshuri batuye.

UMUTWE WA 6: INYAMASWA

(Urupapuro rwa 93 – 95 mu gitabo cy'umunyeshuri)

6.1 Ubushobozi bw'ingenzi bugamijwe

Gutandukanya amoko y'inyamaswa ushingiyeye ku rutirigongo

6.2 Ibyizwe mbere bifitanye isano n'uyu mutwe

Udusimba duto n'ibice byatwo

Inyamaswa zo mu rugo n'izo ku gasozi

6.3 Ubumenyi ku ngingo nsanganyamasomo buri muri uyu mutwe n'uko bugerwaho

- **Gufata neza ibidukikije** bigerwaho mu gihe umunyeshuri amenya amoko y'inyamaswa n'uko yayabungabunga.

6.4 Ubushobozi umunyeshuri azunguka muri uyu mutwe

- **Kwitegereza** agasobanura ibyo yitegereje
- **Gushyikirana n'abandi** igihe akorera mu matsinda cyangwa afatanyaga n'abandi gusobanura amoko y'inyamaswa mu itsinda yari arimo.
- **Gukoresha imvugo isobanutse** igihe asobanura ibyo yakoze.
- **Kugira amashyushyu yo guhora yiyungura ubumenyi** ku nyamaswa ashakisha imibereho n'imiterere yazo.

6.5 Amagambo umunyeshuri yunguka muri uyu mutwe

Urutirigongo: Amagufwa akoze umugongo.

Inigwahabiri: Inyamaswa zihinahina zitagira urutirigongo

Icyanya: Ahantu hagari hazitiye haba inyamaswa zo mu gasozi zisurwa na ba mukerarugendo

Ahantu nyaburanga: ahantu hafite imiterere n'ubwiza byihariye

6.6 Ikibazo nyamukuru

- Umwarimu asomesha agakuru kajyanye n'ikibazo cy'abanyeshuri batazi gutandukanya imiterere y'inyamaswa.
- Asaba abanyeshuri kukaganiraho no kugatangaho ibitekerezo bagaragaza icyo abo banyeshuri bakwiriye gusobanukirwa ku nyamaswa.
- Abasobanurira ko ibisubizo nyabyo bazajya babibona mu masomo bagiye kwiga muri uyu mutwe.

6.7 Uko umwarimu yita by'umwihariko ku bafite ibibazo byihariye yigisha uyu mutwe

- Abagenda buhoro mu myigire yabo abaha ibikorwa byabateganyirijwe usanga muri iki gitabo.
- Abafite ubumuga bw'ingingo banza umenye izo ari zo ubategurire imfashanyigisho zihariye n'imyitoto wagenera buri wese bibafasha kwitegereza no gusobanura amoko y'inyamaswa hakurikijwe imiterere yazo.
- Abafite impano yo kumva no gukora vuba cyane bahe ibikorwa bituma bacukumbura isomo usanga muri iki gitabo.

6.8 Ibyigwa biri muri uyu mutwe wa 6

| | Urutonde rw'ibygwa | Umubare w'amasomo (periods): 6 |
|---|---------------------------------|--------------------------------|
| 1 | Inyamaswa zifite urutirigongo | 2 |
| 2 | Inyamaswa zidafite urutirigongo | 2 |
| 3 | Isuzuma risoza umutwe | 2 |

6.9. Imyigishirize ya buri somo

6.9.1. Isomo rya 1: Inyamaswa zifite urutirigongo

a. Intego

Ubumenyi :

Kurondora inyamaswa zifite urutirigongo

Ubumenyigiro:

Gusobanura imiterere y'inyamaswa zifite urutirigongo

Ubukeshya:

Kugaragaza amatsiko yo kwita ku nyamaswa zifite urutirigongo

b. Intangiriro

Umwarimu asaba abanyeshuri kwitegeregeza amashusho agaragaza inyamaswa zifite urutirigongo, amafoto yazo no kuyaganiraho bagasobanura ibyo babona.

c. Imfashanyigisho

Amatungo yo mu rugo, udusimba duto dushobora kuboneka no gufatika mu buryo bworoshye, amashusho ariho inyamaswa, ibikanka bya purasitiki.

d. Ibikorwa by'imyigire n'imyigishirize

- Umwarimu ategura imfashanyigisho zihagije zituma umunyeshuri amenya imiterere y'inyamaswa zifite urutirigongo
- Ayobora abanyeshuri igihe bakora ibikorwa mu matsinda
- Aha abanyeshuri amabwiriza yateguye akwiye gukurikizwa igihe bakora

ibikorwa byo kwitegereza no gukorakora.

- Ayobora abanyeshuri mu bikorwa byo kubwira no kumurikira abandi ibyo bakoze.
- Aha buri munyeshuri umwanya wo gukora ku giti ke.
- Abafite ibyo bagenerwa byihariye mu myigire yabo; ababa hafi kandi akabaha gukora ibikorwa bafite ubushobozi.
- Aha abakobwa n’abahungu uburenganzira bungana mu gukora ibikorwa bitandukanye bicengeza isomo ryizwe.
- Yunganira abafite ibibazo mu kwitegereza no gutandukanya no kurondora inyamaswa zifite urutirigongo.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize.

Urugero: Ni ibiki biranga inyamaswa zifite urutirigongo ?

Inyamaswa zifite urutirigongo zigira igikanka.

f. Isuzuma

Guha abanyeshuri imyitozo iri mu gitabo cy’umunyeshuri ku nyamaswa zifite urutirigongo

6.9.2. Isomo rya 2: Inyamaswa zidafite urutirigongo

a. Intego

Ubumenyi:

Kurondora inyamaswa zidafite urutirigongo

Ubumenyigiro:

- Gusobanura imiterere y’inyamaswa zidafite urutirigongo
- Kuzitandukanya n’izifite urutirigongo

Ubukeshya:

Kugaragaza amatsiko yo kwita ku nyamaswa zidafite urutirigongo

b. Intangiriro

Inyamaswa zifite urutirigongo.

c. Imfashanyigisho

Amatungo yo mu rugo, udusimba duto dushobora kuboneka no gufatika mu buryo bworoshye, amashusho ariho inyamaswa.

d. Ibikorwa by’imyigire n’imyigishirize

- Umwarimu ategura imfashanyigisho zihagije zituma umunyeshuri amenya imiterere y’inyamaswa zidafite urutirigongo.

- Umwarimu ayobora abanyeshuri igihe bakora ibikorwa mu matsinda.
- Aha abanyeshuri amabwiriza akwiye gukurikizwa igihe bakora ibikorwa byo kwitegereza no gukorakora.
- Ayobora abanyeshuri mu bikorwa byo kubwira no kumurikira abandi ibyo bakoze .
- Abafite ibyo bagenerwa byihariye mu myigire yabo; ababa hafi kandi akabaha gukora ibikorwa bafite ubushobozi.
- Yunganira abafite ibibazo mu kwitegereza, gutandukanya, kurondora inyamaswa zidafite urutirigongo no kuzitandukanya n'izifite urutirigongo.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. **Urugero:** Ni iki gitandukanya inyamaswa zifite urutirigongo n'izindi zitarufite?

- Inyamaswa zifite urutirigongo ni izifite igikanka
- Inyamaswa zidafite urutirigongo izidafite igikanka

f. Isuzuma

Guha abanyeshuri imyitozo iri mu gitabo cy'umunyeshuri yo gutandukanya amoko y'inyamaswa ushingiye ku rutirigongo

6.10 Ibisozu umutwe

a. Inshamake y'ibikubiye muri uyu mutwe

Inyamaswa zifite urutirigongo ni izifite amagufwa mu mibiri yazo naho inyamaswa zidafite urutirigongo nta magufwa zigira mu mibiri yazo.

b. Ubumenyi bw'inyongera umwarimu asabwa kugira

- Kumenya kuyobora ibikorwa byose kandi yita kuri buri munyeshuri nta we asize inyuma.
- Gusobanura ku buryo bwimbitse ibiranga inyamaswa zifite urutirigongo n'izitarufite .
- Gutegura no gukoresha neza imfashanyigisho zinyuranye
- Kumenya neza imyigishirize y'amasomo ku nyamaswa.
- Kumenya uko yacengeza ingingo nsanganyamasomo igihe yigisha iby'inyamaswa.
- Kumenya ibikoresho byose byakwifashishwa mu kugaragaza ibiranga inyamaswa zifite urutirigongo n'izitarufite.
- Kumenya uburyo bunyuranye bwo kwita ku nyamaswa.

c. Ibisubizo by'isuzuma risoza umutwe wa 6 riri mu gitabo cy'umunyeshuri, ku rupapuro rwa 95

1. Intare, impongo n'izindi.
2. Inzuki
- 3.

| Izifite urutirigongo | Izidafite urutirigongo |
|---------------------------------------|--|
| Inka, intare, imbwa, inkoko, urukwavu | Imbaragasa, umubu, inzuki, isazi, ivubi, ijeri |

4.
 - a. Inka, inkoko, intare, impyisi, ...
 - b. Uruyuki, ijeri, isazi, umubu.
- 5.

| Izifite urutirigongo | | Izidafite urutirigongo | |
|----------------------|---|------------------------|---|
| Umunyorogoto | X | Isazi | V |
| Inkende | V | Umukondo w'inyana | V |
| Urusamagwe | V | Impongo | X |
| Ivubi | X | Ijeri | V |
| Umuswa | X | Imbwa | X |

6. a. Ivubi, b. Ikinyabwoya c. Agasurira e. Urushishi i. Imiswa

e. Ibikorwa by'umwihariko bihabwa abanyeshuri bagenda buhoro mu myigire n'ibisubizo byayo

Muge hanze mufate neza udusimba tudafite urutirigongo kandi tutaryana. Mutwitegereze musobanure uko duteye.

Ibisubizo biratandukanye bitewe n'ubwoko bw'udusimba bazafata .

f. Ibikorwa by'umwihariko ihabwa abanyeshuri bihuta cyane mu myigire kurusha abandi n'ibisubizo byayo

Mushushanye inyamaswa ifite urutirigongo mwihitiyemo n'indi idafite urutirigongo.

Ibisubizo biratandukanye bitewe n'ubwoko bw'inyamaswa bazahitamo.

UMUTWE WA 7: INGINGO IMIKAYA N'AMAGUFWA

(Urupapuro rwa 96 – 106 mu gitabo cy'umunyeshuri)

7.1 Ubushobozi bw'ingenzi bugamijwe

Gusobanura isano iri hagati y'ingingo, imikaya n'amagufwa n'uko bifatwa neza.

7.2 Ibyizwe mbere bifitanye isano n'uyu mutwe

Ibice by'umubiri w'umuntu .

7.3 Ubumenyi ku ngingo nsanganyamasomo buri muri uyu mutwe n'ukobugerwaho.

- *Ubwuzuzanye bw'ibitsina byombi* mu gihe abana b'abakobwa n'abahungu bafatanyaga mu gukora ibikorwa byo gufata neza ingingo, imikaya n'amagufwa.
- *Umuco wo gukoresha neza umutungo* igihe afata neza igikanka yigiraho atagitura hasi.

7.4 Ubushobozi umunyeshuri azunguka muri uyu mutwe

- *Kwitegereza* agasobanura ibyo yitegereje.
Urugero: Kwitegereza amashusho yerekana ingingo z'umubiri w'umuntu, igikanka cy'umubiri w'umuntu, imikaya y'umubiri w'umuntu n'uburyo bwo gufata neza ingingo, imikaya n'amagufwa.
- *Gushyikirana n'abandi* igihe akorera mu matsinda cyangwa afatanyaga n'abandi gukora ibikorwa bijyanye n'ingingo imikaya n'amagufwa.
- *Gukoresha invugo* isobanutse igihe arondora ingingo z'umubiri w'umuntu, amagufwa ya buri gice cy'umubiri w'umuntu n'imikaya y'umubiri w'umuntu.
- *Kwikemurira ibibazo* mu gihe akora imyitozo ngororamubiri nta we uyimuhatiye.
- *Gushakashaka no kuvumbura* ibindi byamufasha gusobanura isano iri hagati y'ingingo , imikaya n'amagufwa n'uko bifatwa neza.

7.5 Amagambo umunyeshuri yunguka muri uyu mutwe

Urwano : Igice cy'umuntu kiri hejuru y'amabere

Mu gihumbi : Igice kiri inyuma y'ibitugu

Ubujana bw'ikiganza: Aho ikiganza gihinira ku kuboko

Ikizigira: Igice cy'ukuboko kigana ku rutugu

Mu mayunguyungu : Aho amataho ahurira n'igihimba

Ubujana bw'ikirenge : Aho amagufwa y'ikirenge ahurira n'ukuguru

Ibikonjo : Aho amagufwa y'intoki ahurira n'ukuboko.

Nyiramivumbi: Amagufwa yo mu musaya

Urutirigongo: Igufwa ry'umugongo rifasheho imbavu.

Ingoro z'urutirigongo: Utugufwa tugize urutirigongo.

7.6 Ikibazo nyamukuru

- Umwarimu asomesha agakuru kajyanye n'ikibazo cy'umwana ufite amagufwa adakomeye kandi agoramyeye.
- Asaba abanyeshuri kukaganiraho no kugatangaho ibitekerezo bagaragaza icyo uwo mwana akwiriye gusobanukirwa kugira ngo ikibazo cy'amagufwa ye gikemuke burundu.
- Abasobanurira ko ibisubizo nyabyo bazajya babibona mu masomo bagiye kwiga muri uyu mutwe.

7.7 Uko umwarimu yita by'umwihariko ku bafite ibibazo byihariye yigisha uyu mutwe

- Abagenda buhoro mu myigire yabo abaha ibikorwa byabateganyirijwe usanga muri iki gitabo.
- Abafite ubumuga bw'ingingo banza umenye izo ari zo ubategurire imfashanyigisho zihariye n'ibikorwa wagenera buri wese bijyanye n'ingingo imikaya n'amagufwa .
- Abafite impano yo kumva no gukora vuba cyane bahe ibikorwa bituma bacukumbura isomo usanga muri iki gitabo.

7.8 Ibyigwa biri muri uyu mutwe wa 7

| | Urutonde rw'ibigwa | Umubare w'amasomo (periods): 8 |
|---|--|--------------------------------|
| 1 | Ingingo z'umubiri w'umuntu | 1 |
| 2 | Amagufwa y'umubiri w'umuntu | 2 |
| 3 | Imikaya y'umubiri w'umuntu | 2 |
| 4 | Isano iri hagati y'ingingo, imikaya n'amagufwa | 1 |
| 5 | Gufata neza ingingo, imikaya n'amagufwa | 1 |
| 6 | Isuzuma risoza umutwe | 1 |

7.9 Imyigishirize ya buri somo

7.9.1 Isomo rya 1: Ingingo z’umubiri w’umuntu

a. Intego

Ubumenyi: Kurondora ingingo zigize umubiri w’umuntu.

Ubumenyigiro: Gutandukanya ingingo zigize umubiri w’umuntu.

Ubukeshya: Kugaragaza amatsiko yo kumenya uburyo ingingo, imikaya n’amagufwa byitabwaho.

b. Intangiriro

Saba abanyeshuri bitegereze amashusho agaragaza ingingo z’umubiri w’umuntu, ubasabe gusubiza ibibazo byabajijwe kuri ayo mashusho ugenzura ko bitegereje.

c. Imfashanyigisho

Amashusho manini, ibipupe n’ibishushanyo by’ingingo z’umubiri w’umuntu, ...

d. Ibikorwa by’imyigire n’imyigishirize

- Gutegura imfashanyigisho zihagije zituma umunyeshuri amenya amazina y’ingingo z’umubiri w’umuntu.
- Guha abanyeshuri amabwiriza akwiye gukurikizwa igihe bakora ibikorwa byo kwitegereza amashusho cyangwa gukorakora ibipupe hagamijwe kumenya ingingo z’umubiri w’umuntu.
- Yunganira abafite ibibazo mu kwitegereza no gutandukanya ingingo z’umubiri w’umuntu.

e. Umwanzuro w’isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. *Urugero:* Ingingo ni iki? Umubiri w’umuntu ugizwe n’izihe ngingo? Ingingo ni aho amagufwa abiri cyangwa menshi ahurira.

Umubiri w’umuntu ugizwe n’ingingo zikurikira: inkokora, ivi, amayunguyungu, ubujana, ibikonjo n’akagombambari.

f. Isuzuma

Guha buri munyeshuri igikorwa cyo kwerekana aho ingingo z’umubiri we zihereye.

7.9.2 Isomo rya 2: Amagufwa y’umubiri w’umuntu

a. Intego

Ubumenyi: Kurondora amagufwa y’ingenzi y’umubiri

Ubumenyigiro: Gutanduka amagufwa y’umubiri w’umuntu

Ubukeshya: Kugaragaza amatsiko yo kumenya uburyo ingingo, imikaya n’amagufwa byitabwaho

b. Imyitozo y'isubiramo

Saba abanyeshuri kurondora ingingo z'umubiri w'umuntu, bitegereze amashusho agaragaza amagufwa y'umubiri w'umuntu hanyuma ubasabe gusubiza ibibazo byabajijwe kuri ayo mashusho ugenzura ko bitegereje.

c. Imfashanyigisho

Amashusho manini n'ibishushanyo by'amagufwa y'umuntu, ibipupe bigaragaza amagufwa y'umubiri w'umuntu.

d. Ibikorwa by'imyigire n'imyigishirize

- Gutegura imfashanyigisho zihagije zituma umunyeshuri amenya amazina y'amagufwa y'umubiri w'umuntu.
- Guha abanyeshuri amabwiriza akwiye gukurikizwa igihe bakora ibikorwa byo kwitegereza amashusho cyangwa gukorakora ibipupe hagamijwe kumenya amagufwa y'umubiri w'umuntu.
- Yunganira abafite ibibazo mu kwitegereza no gutandukanya amagufwa y'umubiri w'umuntu.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. **Urugero:** Amagufwa ari kuri buri gice cy'umubiri w'umuntu ni ayahe? Amagufwa ari kuri buri gice cy'umubiri w'umuntu ni aya ari mu mbonerahamwe ikurikira.

| Umutwe | Igihimba | Amaboko | Amaguru |
|-----------------------|-------------------|--------------|-----------------|
| Igufwa ry'agahanga | Urutirigongo | Iriyagahera | Ruseke |
| Nyiramivumbi | Urwano | Iriyagikumwe | Ingasire y'ivi. |
| Amagufwa y'urutwariro | Akanyamurizo | Ikizigira | Igufwa ry'itako |
| Amajigo | Akameme | Ubujana | |
| Urwasaya | Ingata y'umugongo | Ibikonjo | Akagombambari |

Amagufwa ni yo aha isura umubiri w'umuntu.

Amagufwa afasha ingingo zose z'umubiri gukora imiyego.

Amagufwa arinda ubwonko, umutima n'ibihaha bikaguma mu mwanya wabyo.

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy'umunyeshuri byo kugaragaza amazina y'amagufwa y'umubiri w'umuntu.

7.9.3 Isomo rya gatatu: Imikaya y'umubiri w'umuntu

a. Intego

Ubumenyi:

Kurondora imikaya y'ingenzi y'umubiri

Ubumenyigiro:

Gutandukanya imikaya y'umubiri w'umuntu

Ubukasha:

Kugaragaza amatsiko yo kumenya uburyo ingingo, imikaya n'amagufwa byitabwaho

b. Imyitozo y'isubiramo/intangiriro

Saba abanyeshuri kurondora ingingo z'umubiri n'amagufwa y'umubiri w'umuntu, bitegereze amashusho agaragaza imikaya y'umubiri w'umuntu hanyuma ubasabe gusubiza ibibazo byabajijwe kuri ayo mashusho ugenzura ko bitegereje.

c. Imfashanyigisho

Amashusho manini n'ibishushanyo by'imikaya y'umubiri w'umuntu, ibipupe bigaragaza imikaya y'umubiri w'umuntu .

d. Ibikorwa by'imyigire n'imyigishirize

- Gutegura imfashanyigisho zihagije zituma umunyeshuri amenya amazina y'imikaya y'umubiri w'umuntu.
- Guha abanyeshuri amabwiriza akwiye gukurikizwa igihe bakora ibikorwa byo kwitegereza amashusho cyangwa gukorakora ibipupe hagamijwe kumenya imikaya y'umubiri w'umuntu.
- Yunganira abafite ibibazo mu kwitegereza no gutandukanya imikaya y'umubiri w'umuntu.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize.

Urugero:

- Umubiri w'umuntu ugizwe n'iyihe mikaya?
- Iyo mikaya imara iki?

Imikaya iri kuri buri gice cy'umubiri w'umuntu ni iyi iri mu mbonerahamwe ikurikira:

| Umutwe | Igihimba | Amaboko | Amaguru |
|------------------------------|--------------------|---------------------|--------------------|
| Imikaya y'agahanga | Imikaya y'inda | Imikaya y'ikizigira | Imikaya y'itako |
| Imikaya y'umunwa | Imikaya y'agatuza | Imikaya y'ikiganza | Imikaya y'umurundi |
| Imikaya y'amazuru | Imikaya y'umugongo | Imikaya y'intoki | Imbwana |
| Imikaya y'amatwi | | Imikaya y'ukuboko | Imikaya y'ikirenge |
| Imikaya y'ibinogori by'amaso | | | Imikaya y'amano |

Imikaya igize inyama z'umubiri w'umuntu. Imikaya itwikira amagufwa. Imikaya ituma ingingo zose z'umubiri w'umuntu zishobora gukora imiyego.

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy'umunyeshuri byo kwitegerereza no kurondora imikaya y'umubiri w'umuntu.

7.9.4 Isomo rya kane: Isano iri hagati y'ingingo, imikaya n'amagufwa

a. Intego

Ubumenyi:

Gusobanura isano iri hagati y'ingingo, imikaya n'amagufwa.

Ubumenyigiro:

Gutandukanya ingingo, imikaya n'amagufwa by'umubiri w'umuntu.

Ubukeshu:

Kugaragaza amatsiko yo kumenya uburyo ingingo, imikaya n'amagufwa byitabwaho.

b. Imyitozo y'isubiramo

Saba abanyeshuri kurondora ingingo z'umubiri w'umuntu, amagufwa y'umubiri w'umuntu n'imikaya y'umubiri w'umuntu bitegereze amashusho agaragaza isano iri hagati y'ingingo, imikaya n'amagufwa hanyuma ubasabe gusubiza ibibazo byabajijwe kuri ayo mashusho ugenzura ko bitegereje.

c. Imfashanyigisho

Amashusho manini n'ibishushanyo bigaragaza isano iri hagati y'ingingo, imikaya n'amagufwa.

d. Ibikorwa by'imyigire n'imyigishirize

- Gutegura imfashanyigisho zihagije zituma umunyeshuri amenya isano iri hagati y'ingingo, imikaya n'amagufwa.
- Guha abanyeshuri amabwiriza akwiye gukurikizwa igihe bakora ibikorwa byo kwitegereza amashusho hagamijwe kumenya isano iri hagati y'ingingo, imikaya n'amagufwa w'umuntu.
- Yunganira abafite ibibazo mu kwitegereza no gusobanura isano iri hagati y'ingingo, imikaya n'amagufwa.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. *Urugero:* Ni iyihe sano iba hagati y'ingingo, imikaya n'amagufwa by'umuntu?

Isano iri hagati y'ingingo, imikaya n'amagufwa ni uko ingingo ari aho amagufwa abiri cyangwa menshi ahurira. Ayo magufwa agatwikirwa n'imikaya iyafasha gukora imiyego.

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy'umunyeshuri byo gusobanura isano iri hagati y'ingingo, imikaya n'amagufwa .

7.9.5 Isomo rya gatanu: Gufata neza ingingo, imikaya n'amagufwa

a. Intego

Ubumenyi:

Gusobanura uburyo buboneye bwo gufata neza ingingo, imikaya n'amagufwa.

Ubumenyingingiro:

Gutandukanya ingingo, imikaya n'amagufwa by'umubiri w'umuntu.

Ubukeshya:

Kugaragaza amatsiko yo kumenya uburyo ingingo, imikaya n'amagufwa byitabwaho.

b. Imyitozo y'isubiramo

Saba abanyeshuri kurondora ingingo z'umubiri w'umuntu, amagufwa y'umubiri w'umuntu, imikaya y'umubiri w'umuntu. Bagaragaze isano iri hagati y'ingingo, imikaya n'amagufwa. Bitegereze amashusho agaragaza uburyo buboneye bwo gufata neza ingingo, imikaya n'amagufwa. Hanyuma ubasabe gusubiza ibibazo byabajijwe kuri ayo mashusho ugenzura ko bitegereje.

c. Imfashanyigisho

Amashusho manini n'ibishushanyo bigaragaza gufata neza ingingo, imikaya n'amagufwa

d. Ibikorwa by’imyigire n’imyigishirize

- Gutegura imfashanyigisho zihagije zituma umunyeshuri amenya uburyo buboneye bwo gufata neza ingingo, imikaya n’amagufwa
- Guha abanyeshuri amabwiriza akwiye gukurikizwa igihe bakora ibikorwa byo kwitegereza amashusho hagamijwe kumenya uburyo buboneye bwo gufata neza ingingo, imikaya n’amagufwa.
- Yunganira abafite ibibazo mu kwitegereza no gusobanura uko bakwiye gufata neza ingingo, imikaya n’amagufwa byabo.

e. Umwanzuro w’isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. **Urugero:** Twafata neza dute ingingo, imikaya n’amagufwa bigize umubiri w’umuntu?

Mu rwego rwo gufata neza ingingo, imikaya n’amagufwa tugomba gukora ibi bikurikira:

- Gukora imyitoto ngororamubiri
- Kurya indyo yuzuye

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy’umunyeshuri byo gusobanura uburyo buboneye bwo gufata neza ingingo, imikaya n’amagufwa.

7.10 Ibisozu umutwe

a. Inshamake y’ibikubiye muri uyu mutwe

Ingingo ni aho amagufwa abiri cyangwa menshi ahurira. Umuntu agira ingingo zikurikira: Inkokora, amayunguyungu, ubujana, n’ibikonjo.

Amagufwa ni yo aha isura umubiri w’umuntu agafasha ingingo gukora imiyego. Imikaya itwikira amagufwa.

Mu gufata neza ingingo zacu, imikaya n’amagufwa tugomba gukora imyitoto ngororangingo no kurya indyo yuzuye.

b. Ubumenyi bw’inyongera umwarimu asabwa kugira

Mbere yo kwigisha uyu mutwe, umwarimu yita kuri ibi bikurikira:

- Shaka igikanka cya purasitike kizagufasha kwerekana imiterere y’amagufwa n’imikaya y’umubiri w’umuntu.
- Tegura igikorwa k’imyitoto ngororangingo umenye neza inanura imikaya y’umuntu ushobora gutangaho ingero wigisha uyu mutwe.
- Tuma abanyeshuri amoko atandukanye y’ibiribwa hanyuma mukore amatsinda y’ibirimo vitamini c n’ibirimo karisiyumu uyifashishe wigisha uyu mutwe.

UMUTWE WA 8: AMOKO Y'INGUFU

(Urupapuro rwa 107 – 117 mu gitabo cy'umunyeshuri)

8.1 Ubushobozi bw'ingenzi bugamijwe

Gusobanura amoko atandukanye y'ingufu.

8.2 Ibyizwe mbere bifitanye isano n'uyu mutwe

Urumuri n'ubushyuhe.

8.3 Ubumenyi ku ngingo nsanganyamasomo buri muri uyu mutwe n'uko bugerwaho

- *Gufata neza ibidukikije* mu gihe yiyumvisha akamaro ko kudahumanya ikirere bishobora kwangiza agakingirizo k'izuba.
- *Umuco wo gukoresha neza umutungo* igihe afata neza kandi agakoresha neza ingufu nk'amashanyarazi.
- *Kugira umuco wo gukoresha ibyujije ubuziranenge:* mu gihe akoresha ibikoresho bitanga ingufu n'ibikoresha amashanyarazi bifite ubuziranenge, bitamwangiza cyangwa ngo bibe byatera izindi mpanuka.

8.4 Ubushobozi umunyeshuri azunguka muri uyu mutwe

- *Kwitegereza agasobanura* ibyo yitegereje ku mashusho yerekana amoko y'ingufu.
- *Gushyikirana n'abandi igihe akorera mu matsinda* cyangwa afatanyaga n'abandi mu kwitegereza, mu gushakashaka ibintu byose bigaragaza amoko y'ingufu .
- *Gutekereza byimbitse ku gikorwa :* Umunyeshuri asabwa kugira ubushishozi no gutekereza neza ku bikorwa yahawe mbere yo kubikora, bityo akagikora neza uko bikwiye, adahubutse kandi bikamufasha kuvumbura ibyigwa.
- *Gukoresha imvugo isobanutse:* nk'uko umunyeshuri ari we zingiro ry'imyigire ye, aritegereza, agakorakora ku bintu maze agasobanura ibyo yakoze byose mu buryo bwumvikana.
- *Kugira amashyushyu yo guhora* yiyungura ubumenyi ku birebana n'ingufu cyane cyane ku bikoresho bikorehwa n'amashanyarazi.
- *Kwikemurira ibibazo* bifitanye isano n'ingufu. Nko kwicanira ibikoresho bikorehwa n'amashanyarazi, kumenya ko bikora cyangwa byapfuye.

8.5 Amagambo umunyeshuri yunguka muri uyu mutwe

Imiyego: Ukuva ahantu no kwinyagambura kw'ibintu

Ingufu: Ubushobozi bwo gukora umurimo

Rukuruzi: Igikoresho gifite ubushobozi bwo gukurura ubutare cyangwa ibindi ibintu bikoze mu butare

Ubumara: Ibintu bimeze nk'uburozi

Ubutabire: Uburyo bwo kuvangavanga ibintu bigahinduka ibindi

8.6 Ikibazo nyamukuru

- Umwarimu asomesha agakuru kajyanye n'ikibazo cyo kutabungabunga ingufu zikoreshwa hirya no hino.
- Asaba abanyeshuri kukagaganiraho no kugatangaho ibitekerezo bagaragaza igikwiriye gukorwa kugira no abaturage bamenye inkomoko y'ingufu n'akamaro kazoo. Bityo bazifate neza.
- Abasobanurira ko ibisubizo nyabyo bazajya babibona mu masomo bagiye kwiga muri uyu mutwe

8.7 Uko umwarimu yita by'umwihariko ku bafite ibibazo byihariye yigisha uyu mutwe

- Abafata bitinze cyangwa bakora buhoro bahe ibikorwa usanga muri iki gitabo.
- Abafite ubumuga bw'ingingo banza umenye izo ari zo ubategurire imfashanyigisho zihariye zibafasha gusobanukirwa amoko y'ingufu.
- Abafite impano yo kumva no gukora vuba cyane bahe ibikorwa usanga muri iki gitabo .

8.8 Ibyigwa biri muri uyu mutwe wa 8

| | Urutonde rw'ibygwa | Umubare w'amasomo (periods): 11 |
|----|--------------------------|---------------------------------|
| 1 | Igisobanuro k'ingufu | 1 |
| 2 | Inkomoko z'ingufu | 1 |
| 3 | Urumuri rukomoka ku zuba | 1 |
| 4 | Ubushyuhe | 1 |
| 5 | Ijwi | 1 |
| 6 | Amashanyarazi | 1 |
| 7 | Umuyaga | 1 |
| 8 | Ubumara/ubutabire | 1 |
| 9 | Rukuruzi | 1 |
| 10 | Imiyego y' ibintu | 1 |
| 11 | Isuzuma risoza umutwe | 1 |

8.9 Imyigishirize ya buri somo

8.9.1 Isomo rya 1: Igisobanuro k'ingufu

a. Intego

Ubumenyi:

Gusobanura icyo ingufu ari cyo.

Ubumenyigiro:

Gutandukanya ingufu dukoresha mu buzima bwa buri muni.

Ubukeshya:

Kugaragaraza amatsiko yo kumenya ibirebana n'ingufu mu buzima bwa buri muni.

b. Imyitozo y'isubiramo /Intangiriro

Umwarimu aha abanyeshuri imyitozo y'isubiramo ku byo bize mu mwaka wa kabiri birebana n'urumuri n'ubushyuhe.

Urugero: Ashobora kubabaza ibibazo ku bitanga urumuri ndetse n'ibitanga ubushyuhe.

c. Imfashanyigisho

Indangururamajwi nini, ikintu kiremereye cyo guterura, impapuro, amababi mabisi, isitimu, ibyuma bikoze mu butare, rukuruzi, ikibiriti, amashusho agaragaza amoko y'ingufu, akamaro kazo n'aho zikoresha.

d. Ibikorwa by'imyigire n'imyigishirize

- Umwarimu ategura imfashanyigisho zihagije zituma umunyeshuri amenya gusobanuro neza ingufu icyo ari cyo.
- Ayobora abanyeshuri igihe bakora ibikorwa byo kwitegereza no gukorakora.
- Ayobora abanyeshuri mu kubwira no kumurikira abandi ibyo bakoze.
- Aha buri munyeshuri umwanya wo gukora ku giti ke.
- Abafite ibyo bagenerwa byihariye mu myigire yabo; ababa hafi kandi akabaha gukora ibikorwa bafiteye ubushobozi.
- Aha abakobwa n'abahungu uburenganzira bungana mu gukora ibikorwa bitandukanye bicengeza isomo ryizwe.
- Yunganira abafite ibibazo mu kwitegereza no gusobanura ingufu icyo ari cyo.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. **Urugero:** Ingufu ni iki ?

Ingufu ni ubushobozi bwo gukora umurimo.

f. Isuzuma

Guha abanyeshuri igikorwa kiri mu gitabo cy’umunyeshuri kirebana n’igisobanuro k’ingufu.

8.9.2 Isomo rya 2: Inkomoko y’ingufu

a. Intego

Ubumenyi:

Gusobanura aho ingufu zituruka.

Ubumenyigiro:

Gutandukanya aho ingufu dukoresha mu buzima bwa buri munsu zituruka.

Ubukeshya:

Kugaragaraza amatsiko yo kumenya ibintu binyuranye bitanga ingufu.

b. Intangiriro

Umwarimu aha abanyeshuri ibikorwa byo kwitegereza amashusho agaragaza ibintu bitandukanye bitanga ingufu no kubiganiraho.

c. Imfashanyigisho

Amashusho agaragaza ibitanga ingufu, amakara, inkwi, peteroli ,...

d. Ibikorwa by’imyigire n’imyigishirize

- Umwarimu ategura imfashanyigisho zihagije zituma umunyeshuri amenya ibintu binyuranye bitanga ingufu.
- Ayobora abanyeshuri igihe bakora ibikorwa byo kwitegereza ibintu binyuranye bitanga ingufu.
- Aha abafite ibyo bagenerwa byihariye ibikorwa bafite ubushobozi .
- Yunganira abafite ibibazo mu kwitegereza no gutandukanya ibintu bitanga ingufu.

e. Umwanzuro w’isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. *Urugero:* Ingufu zikomoka ku ki?

- Habaho ingufu zikomoka ku biryo abantu barya, ingufu ziva ku bicanwa n’iziva kuri risansi na mazutu.

f. Isuzuma

Guha abanyeshuri igikorwa kiri mu gitabo cy’umunyeshuri ku bintu bitandukanye bitanga ingufu.

8.9.2 Isomo rya 3: Amoko y'ingufu n'ingeri z'aho izo ngufu zikoreshwa

a. Intego

Ubumenyi:

Gusobanura akamaro k'urumuri rw'izuba.

Ubumenyigiro

Gutandukanya urumuri rw'izuba n'izindi ngufu.

Ubukeshya

- Kugaragaraza amatsiko yo kumenya akamaro k'urumuri rw'izuba
- Kwishimira ikoreshwa ry'urumuri rw'izuba.

b. Imyitozo y'isubiramo /Intangiriro

- Umwarimu aha abanyeshuri imyitozo y'isubiramo ku moko y'ingufu.
- Asaba abanyeshuri kwitegereza amashusho agaragaza amoko y'ingufu n'ingeri z'aho izo ngufu zikoreshwa.

c. Imfashanyigisho

Indangururamajwi nini, ikintu kiremereye cyo guterura, impapuro, amababi mabisi, isitimu, ibyuma bikoze mu butare, rukuruzi, ikibiriti, amashusho agaragaza urumuri rw'izuba.

d. Ibikorwa by'imyigire n'imyigishirize

- Umwarimu ategura imfashanyigisho zihagije zituma umunyeshuri amenya amoko y'ingufu kandi akerekana n'aho zikoreshwa.
- Aha abanyeshuri amabwiriza akwiye gukurikizwa igihe bakora ibikorwa byo kwitegereza no gukorakora ibintu binyuranye bigaragaza aho ingufu zikoreshwa.
- Aba hafi abafite ibyo bagenerwa byihariye mu myigire yabo , akabaha gukora ibikorwa bafiteye ubushobozi ku buryo bagendana n'abandi.
- Yunganira abafite ibibazo mu kwitegereza no gutandukanya amoko y'ingufu, no gusobanura aho zikoreshwa n'akamaro kazo.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. **Urugero:** Ingufu zirimo amoko angahe?

Ingufu zirimo amoko atandukanye bitewe n'aho zikomoka :

Urumuri rukomaka ku zuba

Ubushyuhe butangwa n'izuba , ibicanwa n'amashanyarazi

Ijwi rituruka ku gutigita kw'ibintu

Ingufu zituruka ku mashanyarazi zikoresha ibikoresho bitandukanye nka radiyo, ipasi, mudasobwa n'ibindi.

Ingufu zituruka ku muyaga zatsa cyangwa zikazimya umuriro, zumisha

3.

- a. Mu nganda, mu bukanishi, mu buvuzi n'ahandi.
- b. Mu nganda, mu buvuzi n'ahandi.
- c. Mu nganda, mu mazu n'ahandi.
- d. Mu nganda, mu bukorikori, mu mazu, mu mihanda, mu buvuzi n'ahandi.
- e. Ahateraniye abantu, mu nzu z'ibitangazamakuru (radiyo na tereviziyo)
- f. Mu mazu, mu nganda, mu bworozi, mu buhinzi n'ahandi.
- g. Mu mazu, kumisha imyenda n'ahandi.

4.

- a. Umuyaga n'imirasire y'izuba.
 - b. Ubushyuhe
 - c. Umuyaga n'imiyego y'ibintu
 - d. Amashanyarazi, izuba, umuyaga n'ubushyuhe
 - e. Imiyego y'abantu
 - f. Imiyego y'abantu n'ijwi .
5. Ibisubizo biratandukanye bitewe n'aho umunyeshuri ari.
 6. Ibisubizo biratandukanye bitewe n'aho umunyeshuri ari.
 7. Zitanga urumuri, ubushyuhe, zituma ibikoresho bikora.
 8. Umuyaga, imirasire y'izuba, imashini, amazi n'ibindi.
 9. Kumisha imyenda, kugosora ibinyampeke, gutanga amashanyarazi.

e. Ibikorwa by'umwihariko bihabwa abanyeshuri bagenda buhoro mu myigire n'ibisubizo byayo

Muzenguruke ikigo k'ishuri ryanyu mu gihe cyo gukina, murebe amoko y'ingufu akoreshwa, muze muyabwire bagenzi banyu.

Ibisubizo biterwa n'imiterere ya buri kigo n'amoko y'ingufu gikoresha.

f. Ibikorwa by'umwihariko ihabwa abanyeshuri bihuta cyane mu myigire kurusha abandi n'ibisubizo byayo

Uzuza iyi mbonerahamwe

| Amoko y'ingufu | Akamaro |
|------------------|---|
| 1. Ubushyuhe | Guteka, kumisha imyenda, gutera ipasi,.... |
| 2. Ijwi | Guhamagara, kurangurura amajwi,.... |
| 3. Amashanyarazi | Gucana, gukoresha ibyuma bitandukanye, |

UMUTWE WA KENDA : AMASHANYARAZI

(Urupapuro rwa 118 – 126 mu gitabo cy'umunyeshuri)

9.1 Ubushobozi bw'ingenzi bugamijwe

Gushobora kuvumbura ibikoresho bikoresha amashanyarazi n'umumaro wayo.

9.2 Ibyizwe mbere bifitanye isano n'uyu mutwe

Amoko y'ingufu n'akamaro kayo.

9.3 Ubumenyi ku ngingo nsanganyamasomo buri muri uyu mutwe n'uko bugerwaho

- *Umuco wo gukoresha neza umutungo* igihe afata neza kandi agakoresha neza amashanyarazi.
- *Kugira umuco wo gukoresha ibyujuje ubuziranenge* : mu gihe akoresha ibikoresho bikoresha amashanyarazi bifite ubuziranenge, bitamwangiza cyangwa ngo bibe byatera izindi mpanuka.
- *Gufata neza ibidukikije*, mu gihe yiyumvisha akamaro ko gufata neza imiyoboro y'amashanyarazi.

9.4. Ubushobozi umunyeshuri azunguka muri uyu mutwe

- *Kwitegereza agasobanura* ibyo yitegereje ku mashusho amufasha gusobanura amashanyarazi icyo ari cyo.
- *Gushyikirana n'abandi* igihe akorera mu matsinda cyangwa afatanyana n'abandi mu kwitegereza, mu gushakashaka ibintu byose bikoresha amashanyarazi.
- *Gutekereza byimbitse ku gikorwa* : Umunyeshuri asabwa kugira ubushishozi no gutekereza neza ku bikorwa yahawe mbere yo kubikora, bityo akagikora neza uko bikwiye, adahubutse kandi bikamufasha kuvumbura ibyigwa.
- *Gukoresha imvugo isobanutse* nk'uko umunyeshuri ari we zingiro ry'imyigire ye, aritegereza, agakorakora ku bintu maze agasobanura mu buryo bwumvikana ibyo yakoze byose.
- *Kugira amashyushyu yo guhora* yiyungura ubumenyi ku birebana n'amashanyarazi cyane cyane ku bintu bishobora gutanga amashanyarazi.
- *Kwikemurira ibibazo bifitanye isano n'ingufu* nko kwicanira ibikoresho bikoreshwa amashanyarazi, kumenya ko bikora cyangwa byapfuye cyangwa kwishingana mu rwego rwo kwirinda impanuka zaterwa n'amashanyarazi.

9.5. Amagambo umunyeshuri yunguka muri uyu mutwe

Gucomeka: Kwinjiza igikoresho muri purize

Gucomokora : Gukura igikoresho muri purize

Insinga: Imigozi ikoze mu cyuma inyuramo amashanyarazi ikayageza aho akoresherezwa.

9.6 Ikibazo nyamukuru

- Umwarimu asomesha agakuru kajyanye n’abaturage bafite amashanyarazi ariko batazi uko bayakoresha neza ngo birinde ibyago byayaturukaho.
- Asaba abanyeshuri kukaganiraho no kugatangaho ibitekerezo bagaragaza icyo basobanurira abo baturage cyabafasha gukoresha neza amashanyarazi birinda ko yabatera ibyago.
- Abasobanurira ko ibisubizo nyabyo bazajya babibona mu masomo bagiye kwiga agize uyu mutwe.

9.7 Uko umwarimu yita by’umwihariko ku bafite ibibazo byihariye yigisha uyu mutwe

- Abafata bitinze cyangwa bagenda buhoro mu myigire yabo bategurire ibikorwa usanga muri iki gitabo.
- Abafite ubumuga bw’ingingo banza umenye izo ari zo ubategurire imfashanyigisho zihariye n’imyitozo wagenera buri wese ku buryo biga badasigaye inyuma.
- Abafite impano yo kumva no gukora vuba cyane bahe ibikorwa usanga muri iki gitabo.

9.8 Ibyigwa biri muri uyu mutwe wa 9

| | Urutonde rw’ibygwa | Umubare w’amasomo (periods): 5 |
|---|---|--------------------------------|
| 1 | Igisobanuro cy’amashanyarazi n’akamaro kayo | 1 |
| 2 | Ibikoresho bikoresha amashanyarazi | 1 |
| 3 | Ibyago bikomoka ku mashanyarazi n’uburyo wabyirinda | 1 |
| 4 | Uburyo bwo kwirinda ibyago bikomoka ku mashanyarazi | 1 |
| 5 | Isuzuma risoza umutwe | 1 |

9.9 Imyigishirize ya buri somo

9.9.1 Isomo rya 1: Igisobanuro cy’amashanyarazi n’akamaro kayo

a. Intego

Ubumenyi:

Gusobanura amashanyarazi n’akamaro kayo

Ubumenyigiro:

Gukoresha neza ibikoresho bitandukanye bikoresha amashanyarazi

Ubukeshya:

Kwishimira akamaro k’amashanyarazi

b. Imyitozo y'isubiramo /Intangiriro

- Imyitozo y'isubiramo ku moko y'ingufu.
- Kwitegereza amashusho afasha abanyeshuri gusobanura amashanyarazi icyo ari cyo n'akamaro kayo.

c. Imfashanyigisho

Ibikoresho bikoresha amashanyarazi: Mudasobwa, terefoni, ipasi, firigo, itoroshi, iziko rikoresha amashanyarazi, icyuma gishyushya mu nzu, tereviziyo, radiyo.

d. Ibikorwa by'imyigire n'imyigishirize

- Umwarimu ategura imfashanyigisho zihagije zituma umunyeshuri amenya gusobanura amashanyarazi n'akamaro kayo.
- Ayobora abanyeshuri mu bikorwa byo kwitegereza.
- Abafite ibyo bagenerwa byihariye mu myigire yabo; ababa hafi kandi akabaha gukora ibikorwa bafitiye ubushobozi.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. **Urugero:** Amashanyarazi ni iki? Afite akahe kamaro?

- Amashanyarazi ni bumwe mu bwoko bw'ingufu bunyuzwa mu nsinga kugira ngo butume ibikoresho bikoresha amashanyarazi bikora.
- Amashanyarazi adufasha kumesa imyenda, guteka, gutera ipasi no gukoresha ibindi bikoresho binyuranye nka terefoni, mudasobwa,...

f. Isuzuma

Guha abanyeshuri imyitozo iri mu gitabo cy'umunyeshuri yo gusobanura amashanyarazi n'akamaro kayo.

g. Ibisubizo by'imyitozo iri muri iki kigwa, iri ku rupapuro 121 mu gitabo cy'umunyeshuri

1. Amashanyarazi atanga urumuri, atuma ibikoresho binyuranye biyakoresha bikora.
2. Radio, tereviziyo, amashyiga, mudasobwa

9.9.2 Isomo rya 2: Ibikoresho bikoresha amashanyarazi

a. Intego

Ubumenyi :

Kurondora ibikoresho byo mu rugo no ku ishuri bikoresha amashanyarazi.

Ubumenyigiro:

Gukoresha neza ibikoresho bitandukanye bikoresha amashanyarazi.

Ubukesho:

Kwishimira ibikoresho bikoresha amashanyarazi.

b. Intangiriro

Umwarimu asubiramo abaza ibibazo ku mashanyarazi.

c. Imfashanyigisho

Ibikoresho bikoresha amashanyarazi: Mudasobwa, terefoni, ipasi, firigo, itoroshi, iziko rikoresha amashanyarazi, icyuma gishyushya mu nzu, tereviziyo, radiyo, isaha, imashini yogosha ...

d. Ibikorwa by'imyigire n'imyigishirize

- Kwitegereza amashusho ari mu gitabo cy'umunyeshuri.
- Umwarimu ategura imfashanyigisho zihagije zituma umunyeshuri amenya neza gutandukanya ibikoresho bikoresha amashanyarazi n'ibindi bitayakoresha.
- Akurikira neza uko abanyeshuri bitegereza n'uko basobanura ibyo bitegereje akabunganira aho bagize ingorane.
- Abakobwa n'abahungu abaha uburenganzira bungana mu gukora ibikorwa bitandukanye bicengeza isomo ryizwe.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. *Urugero:* Ni ibihe bikoresho uzi bikoresha amashanyarazi mu rugo no ku ishuri?

Hari ibikoresho byinshi mu rugo no ku ishuri bikoresha amashanyarazi: Radiyo, mudasobwa, terefoni, tereviziyo, imashini zidoda, imashini zogosha, akuma gatanga umuyaga, ...

Mwarimu asaba abanyeshuri gushyira ibikoresho mu mbonerahamwe.

f. Isuzuma

Guha abanyeshuri imyitozo iri mu gitabo cy'umunyeshuri ku bikoresho bikoresha amashanyarazi.

g. Ibisubizo by'umwitozo uri muri iki kigwa, kuri rupapuro rwa 122 mu gitabo cy'umunyeshuri

Ibisubizo biratandukanye bitewe n'ibikoresho iwabo batunze.

9.9.3 Isomo rya 3: Ibyago bikomoka ku mashanyarazi.

a. Intego

Ubumenyi:

Kurondora ibyago bikomoka ku mashanyarazi .

Ubumenyigiro:

Kwirinda ibyago bikomoka ku mashanyarazi.

Ubukeshya:

Kwitondera imikoreshereze y'amashanyarazi.

b. Imyitozo y'isubiramo /Intangiro

Imyitozo y'isubiramo ku bikoresho bikoresha amashanyarazi

Igikorwa cyo kwitegereza amashusho agaragaza ibyago bikomoka ku mashanyarazi n'uko wabyirinda.

c. Imfashanyigisho

Ibikoresho bikoresha amashanyarazi cyangwa ibitanga amashanyarazi.

d. Ibikorwa by'imyigire n'imyigishirize

- Umwarimu ategura imfashanyigisho zihagije zituma umunyeshuri amenya ibyatera ibyago bikomoka ku mashanyarazi n'ukuntu yabyirinda.
- Ayobora abanyeshuri igihe bakora ibikorwa byo kwitegereza no kuganira ku byago bikomoka ku mashanyarazi n'uburyo bukwiriyeye bwo kubwirinda.
- Abafite ibyo bagenerwa byihariye mu myigire yabo; ababa hafi kandi akabaha gukora ibikorwa bafitiye ubushobozi.
- Yunganira abafite ibibazo mu kwitegereza ibikoresho bikoreshwa amashanyarazi n'icyo bikora.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. **Urugero:** Ibyago bikomoka ku mashanyarazi biterwa n'iki?

Ibyago bikomoka ku mashanyarazi biterwa ahanini no gucomeka ikintu icyo ari cyo cyose ku muriro ufite intoki zitose, kumena amazi ku kintu gicometse, gukinisha insinga z'amashanyarazi, gucomekera rimwe ibintu byinshi muri purize imwe. Ariko cyane cyane biterwa no gucokoza cyangwa gukinisha insinga zitwara amashanyarazi.

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy'umunyeshuri ku byago biterwa n'amashanyarazi no ku buryo bwo kubwirinda.

g. Ibisubizo by'imyitozo iri muri iki kigwa, iri ku rupapuro rwa 125 mu gitabo cy'umunyeshuri

1. Nakwirinda kwinjiza ibiti bibisi mu mapurize, kurira amapironi y'amashanyarazi, gukora ku nkono iri ku ishyiga ry'amashanyarazi ntambaye inkweto.
2. Kuko twafatwa n'amashanyarazi.
3. b

9.10 Ibisozwa umutwe

a. Inshamake y'ibikubiye muri uyu mutwe

Amashanyarazi ni ubwoko bw'ingufu bukoresha ibintu binyuranye byifashishwa mu kumurika, guteka, gukora indi mirimo inyuranye nko gutera ipasi, kogosha, kwandika.

Amashanyarazi azirana n'amazi. Gukinisha insinga na byo byateza impanuka kimwe no gucomeka ibintu byinshi kuri purize imwe.

b. Ubumenyi bw'inyongera umwarimu asabwa kugira

- Kumenya gusobanura neza uko bigenda iyo umuntu yafashwe n'amashanyarazi n'ukuntu wabyitwaramo.

Urugero: nko kutamukoraho, kutamwegera, kwirinda ibiti bibisi biri hafi aho cyangwa ibindi bitose, kwambara inkweto za parasitiki no kwirinda kugendesha ibirenge hafi aho.

- Kumenya uko wazimya ahantu hafashwe n'inkongi ukoresheje kizimyamoto.
- Gukangurira abanyeshuri gukoresha neza amashanyarazi igihe ari ngombwa no kwirinda kuyakinisha.

c. Ibisubizo by'isuzuma risoza umutwe wa 9 riri ku rupapuro rwa 126 mu gitabo cy'umunyeshuri

1. Amashanyarazi ni ingufu zishobora kubyarwa n'uguhindurwa kw'imirasire y'izuba cyangwa n'ukwikaraga kw'ibyuma biri mu nda ya moteri zikanyura mu nsinga.
2. a× b✓ c× d✓ e✓ f✓ g× h✓ i✓
3. – Kudakinisha insinga
– Kudacomeka ibikoresho mfite intoki zitose
– Kutajomba ibyuma muri purize
– Kudakora ku mashyiga y'amashanyarazi utambaye inkweto.
4. Amashanyarazi ni ingufu zituma ibikoresho biyakenera bikora.
5. Gucana, gucomeka, umuriro, urumuri, kuzimya, kwaka, kuzima, amatoroshi, radiyo, ikizima, itara.
6. Ipasi, radiyo, tereviziyo, amashyiga, itoroshi
7. Gutwika ibintu, kwica abantu, guteza inkongi

d. Ibikorwa by'umwihariko bihabwa abanyeshuri bagenda buhoro mu myigire n'ibisubizo byayo

Mwitegereze mu kigo cyanyu ibintu byose bikoresha amashanyarazi, mukore urutonde rwabyo.

Ibisubizo biterwa n'ibikoresho bikoresha amashanyarazi ikigo gitunze.

e. Ibikorwa by'umwihariko ihabwa abanyeshuri bihuta cyane mu myigire kurusha abandi n'ibisubizo byayo

1. Usanze umuntu yafashwe n'amashanyarazi wabigenza ute? Sobanura.
2. Vuga ibikoresho birinda abantu gufatwa n'amashanyarazi
3. Ni iki gikunze gutuma abantu bafatwa n'amashanyarazi?

Ibisubizo

1. Bazatanga ibitekerezo binyuranye abandi babigehe impaka.
2. Ibikoze muri parasitiki no mu birahure.
3. Bazatanga ibitekerezo binyuranye abandi babigehe impaka.

UMUTWE WA 10: RUKURUZI

(Urupapuro rwa 127 – 133 mu gitabo cy'umunyeshuri)

10.1 Ubushobozi bw'ingenzi bugamijwe

Kuvumbura ingufu n'ibiranga rukuruzi, gutandukanya ibikururwa n'ibidakururwa na rukuruzi.

10.2 Ibyizwe mbere bifitanye isano n'uyu mutwe.

Ingufu za rukuruzi.

10.3 Ubumenyi ku ngingo nsanganyamasomo buri muri uyu mutwe n'uko bugerwaho

- *Ubwuzuzanye bw'ibitsina byombi* mu gihe abana b'abakobwa n'abahungu bafatanyaga mu gukora ibikorwa bitandukanye bijyanye n'ingufu za rukuruzi.
- *Umuco wo gukoresha neza umutungo* igihe umunyeshuri afata neza rukuruzi n'ibikoresho bikururwa n'ibidakururwa na rukuruzi azakoresha igihe azaba akora ibikorwa byose bijyanye no kumenya byimbitse ibijyanye n'ingufu za rukuruzi.
- *Gufata neza ibidukikije* igihe abanyeshuri basiga aho bakoreye ibikorwa bitandukanye hameze nk'uko bahasanze batahanduje.

10.4. Ubushobozi umunyeshuri azunguka muri uyu mutwe

- *Kwitegereza* agasobanura ibyo yitegereje.
Ingero: Kwitegereza amashusho yerekana ingufu za rukuruzi n'ibiziranga, ibibi bya rukuruzi, ibikoresho bikora nka rukuruzi n'ibikoresho bikururwa n'ibidakururwa na rukuruzi.
- *Gushyikirana n'abandi* igihe akorera mu matsinda cyangwa afatanyaga n'abandi gukora ibikorwa bijyanye n'ingufu za rukuruzi.
- *Gukoresha imvugo isobanutse* igihe arondora ibiranga rukuruzi, ibibi bya rukuruzi, ibikoresho bikora nka rukuruzi n'ibikoresho bikururwa n'ibidakururwa na rukuruzi.
- *Kwikemurira ibibazo* mu gihe akoresha rukuruzi ayifatisha ibiceri, ayibikaho udukoresho dukoze mu butare cyangwa ibindi birimo rukuruzi.
- *Gushakashaka no kuvumbura* ibindi byamufasha gusobanura ibiranga rukuruzi, ibibi bya rukuruzi, ibikoresho bikora nka rukuruzi n'ibikoresho bikururwa n'ibidakururwa na rukuruzi.

10.5 Amagambo umunyeshuri yunguka muri uyu mutwe

Rukuruzi: Ni igikoresho gikurura ibikoresho bikoze mu butare n'ibindi birimo ubutare

Ibikoresho bikururwa na rukuruzi: Ni ibikoresho bikoze mu butare

Ibikoresho bidakururwa na rukuruzi: Ni ibikoresho bidakoze mu butare

Rukuruzi zisunikana: Ni rukuruzi ebyiri cyangwa nyinshi zihuje imitwe

Rukuruzi zikururana: Ni rukuruzi ebyiri cyangwa nyinshi zidahuje imitwe

10.6 Ikibazo nyamukuru

- Umwarimu asomesha agakuru kajyanye n'ikibazo cy'umuryango wamennye ubutare buseye ku mbuga y'urusekabuye ukayoberwa uko wabivangura.
- Asaba abanyeshuri kukaganiraho no kugatangaho ibitekerezo bagaragaza icyo basobanurira uwo muryango cyabafasha gukemura icyo kibazo.
- Abasobanurira ko ibisubizo nyabyo bazajya babibona mu masomo bagiye kwiga agize uyu mutwe.

10.7 Uko umwarimu yita by'umwihariko ku bafite ibibazo byihariye yigisha uyu mutwe

- Abagenda buhoro mu myigire yabo abaha ibikorwa byabateganyirijwe usanga muri iki gitabo.
- Abafite ubumuga bw'ingingo banza umenye izo ari zo ubategurire imfashanyigisho zihariye n'ibikorwa wagenera buri wese bijyanye n'iri somo rirebana na rukuruzi.
- Abafite impano yo kumva no gukora vuba cyane bahe ibikorwa bituma bacukumbura isomo usanga muri iki gitabo.

10.8 Ibyigwa biri muri uyu mutwe wa 10

| | Urutonde rw'ibygwa | Umubare w'amasomo (periods): 6 |
|---|---|--------------------------------|
| 1 | Igisobanuro cya rukuruzi | 1 |
| 2 | Ingufu za rukuruzi n'ibiziranga | 1 |
| 3 | Ibikoresho bikururwa n'ibidakururwa na rukuruzi | 1 |
| 4 | Ibibi by'ingufu za rukuruzi | 1 |
| 5 | Ibikoresho bikora nka rukuruzi | 1 |
| 6 | Isuzuma risoza umutwe | 1 |

10.9 Imyigishirize ya buri somo

10.9.1 Isomo rya mbere: Igisobanuro cya rukuruzi

a. Intego

Ubumenyi:

Gutanga ubusobanuro bw'inyito rukuruzi

Ubumenyigiro:

Kwitegereza ingufu za rukuruzi

Ubukeshya:

Kwitwararika ku mikoreshereze ya rukuruzi

b. Intangiriro

Saba abanyeshuri bitegereze amashusho agaragaza rukuruzi z'amoko yose, ubasabe gusubiza ibibazo byabajijwe kuri ayo mashusho ugenzura ko bayitegereje.

c. Imfashanyigisho

Rukuruzi z'amoko atandukanye.

d. Ibikorwa by'imyigire n'imyigishirize

- Umwarimu ategura imfashanyigisho zihagije zituma umunyeshuri amenya rukuruzi icyo ari cyo.
- Guha abanyeshuri amabwiriza akwiye gukurikizwa igihe bakora ibikorwa byo kwitegereza amashusho cyangwa gukorakora rukuruzi hagamijwe gutahura igisobanuro k'ingufu za rukuruzi.
- Umwarimu yunganira abafite ibibazo mu kwitegereza no gusobanukirwa n'ibijyanye n'ingufu za rukuruzi.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize.

Urugero: Rukuruzi ni iki?

Rukuruzi ni igikoresho gifite ubushobozi bwo gukurura ubutare n'ibindi bikoresho birimo ubutare.

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy'umunyeshuri byo kuvumbura ingufu za rukuruzi.

10.9.2 Isomo rya kabiri: Ingufu za rukuruzi n'ibiziranga

a. Intego

Ubumenyi:

Gusobanura ibiranga ingufu za rukuruzi

Ubumenyingingiro:

Kwitegereza ingufu za rukuruzi

Ubukeshya:

Kwitwararika ku mikoreshereze ya rukuruzi

b. Imyitozo y'isubiramo

Igisobanuro k'ingufu za rukuruzi.

c. Imfashanyigisho

Rukuruzi z'amoko atandukanye.

d. Ibikorwa by'imyigire n'imyigishirize

- Umwarimu ategura imfashanyigisho zihagije zituma umunyeshuri amenya ibiranga ingufu za rukuruzi.
- Umwarimu aha abanyeshuri amabwiriza akwiye gukurikizwa igihe bakora ibikorwa byo kwitegereza amashusho cyangwa gukorakora rukuruzi hagamijwe gutahura ibiranga rukuruzi.
- Umwarimu yunganira abafite ibibazo mu kwitegereza no gusobanukirwa ibiranga ingufu za rukuruzi.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. *Urugero:* Ingufu za rukuruzi zikora zite?

- Rukuruzi zegeranye imitwe yazo isa zirasunikana naho rukuruzi zengeranye zidafite imitwe isa zigakururana.
- Rukuruzi ntukurura ibindi bikoresho bikoze mu mpapuro, mu kirahuri, mu rubaho no muri parasitiki.

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy'umunyeshuri byo kuvumbura ibiranga ingufu za rukuruzi.

g. Ibisubizo by'imyitozo iri kuri iki kigwa ku rupapuro rwa 129 mu gitabo cy'umunyeshuri

- a. Ibiceri n'utuntu dukoze mu butare bikururwa na rukuruzi
- b. Rukuruzi zirasunikana
- c. Rukuruzi zirakururana
- d. Ingufu za rukuruzi zambukiranya urupapuro.

10.9.3 Isomo rya gatatu: Ibikoresho bikururwa n'ibidakururwa na rukuruzi

a. Intego

Ubumenyi:

Kurondora ibikoresho bikururwa n'ibidakururwa n'ingufu za rukuruzi

Ubumenyigiro:

Gutandukanya ibikoresho bikururwa n'ibidakururwa na rukuruzi

Ubukeshya:

Kwitwararika ku mikoreshereze ya rukuruzi.

b. Imyitozo y'isubiramo /Intangiriro

Ingufu za rukuruzi n'ibiziranga.

c. Imfashanyigisho

- Ibikoresho bitandukanye bikoze mu giti, muri purasitike, mu birahure, mu mabuye,...
- Ibikoze mu cyuma nk'utwuma dufungura amavisi, udufashi, inzembe, ibikwasi, ...

d. Ibikorwa by'imyigire n'imyigishirize

- Umwarimu ategura imfashanyigisho zihagije zituma buri munyeshuri asobanukirwa neza ibikoresho bikururwa n'ibidakururwa na rukuruzi.
- Umwarimu ayobora abanyeshuri mu bikorwa byo kwitegereza amashusho cyangwa gukorakora ibikoresho bikururwa n'ibidakururwa na rukuruzi nk'ibikoresho birimo ubutare n'ibikoresho bitarimo ubutare.
- Umwarimu yunganira abafite ibibazo mu kwitegereza no gutandukanya ibikoresho bikururwa n'ibidakururwa na rukuruzi.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. **Urugero:** Vuga ibintu bishobora gukururwa na rukuruzi n'ibindi idashobora gukurura.

- Rukuruzi ikurura ibikoresho byose birimo ubutare nk'ibiceri, igikwasi urwembe imisumari,...
- Rukuruzi ntukurura ibikoresho byose bikoze muri parasitiki, mu biti, mu birahuri no mu mpapuro.

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy'umunyeshuri byo kuvumbura ibikoresho bikururwa n'ibidakururwa na rukuruzi.

g. Ibisubizo by'imyitozo iri kuri iki kigwa ku rupapuro rwa 130 mu gitabo cy'umunyeshuri

Rukuruzi ikurura ibiceri, udusumari, imfunguzo, inshinge, inzembe n'udufashi tw'impapuro.

10.9.4 Isomo rya kane: Ibibi by'ingufu za rukuruzi

a. Intego

Ubumenyi:

Gusobanura ingaruka mbi z'ingufu za rukuruzi

Ubumenyigiro:

Kwirinda ibibi by'ingufu za rukuruzi

Ubukasha:

Kwitwararika imikoreshereze ya rukuruzi

b. Imyitozo y'isubiramo /Intangiriro

Ingufu za rukuruzi, ibiziranga n'ibikoresho bikururwa n'ibidakururwa na rukuruzi.

c. Imfashanyigisho

Amashusho manini n'ibishushanyo bigaragaza ibibi bya rukuruzi.

d. Ibikorwa by'imyigire n'imyigishirize

- Umwarimu ategura imfashanyigisho zihagije zituma buri munyeshuri asobanukirwa neza ibibi by'ingufu za rukuruzi.
- Umwarimu ayobora abanyeshuri mu bikorwa byo kwitegereza amashusho agaragaza ibibi bya rukuruzi.
- Umwarimu yunganira abafite ibibazo mu kwitegereza no gutandukanya ibibi n'ibyiza bya rukuruzi.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize.

Urugero: Ni ibiki bishobora kwangizwa na rukuruzi?

Rukuruzi yangiza amakarita ya banki, indangamuntu, mudasobwa, kasete za radiyo na videwo, CD, DVD.

Rukuruzi itera uburwayi iyo umuntu uyikoresha ayishyira mu kanwa cyangwa akamira uduce twayo.

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy'umunyeshuri byo gusobanura ibibi bya rukuruzi.

g. Ibisubizo by'imyitozo iri kuri iki kigwa ku rupapuro rwa 131 mu gitabo cy'umunyeshuri

a, b na d ibikoresho ntibikururwa na rukuruzi

10.9.5 Isomo rya gatanu: Ibikoresho bikora nka rukuruzi

a. Intego

Ubumenyi:

Kurondora ibikoresho bikora nka rukuruzi

Ubumenyigiro:

Ubukasha:

Kwitwararika ku mikoreshereze ya rukuruzi

b. Imyitozo y'isubiramo /Intangiriro

Ingufu za rukuruzi, ibiziranga, ibikoresho bikururwa n'ibidakururwa na rukuruzi ndetse n'ibibi byazo.

c. Imfashanyigisho

Amashusho ariho ibikoresho bikora nka rukuruzi.

d. Ibikorwa by'imyigire n'imyigishirize

- Umwarimu ategura imfashanyigisho zihagije zituma buri munyeshuri asobanukirwa neza ibikoresho bikora nka rukuruzi.
- Umwarimu ayobora abanyeshuri mu bikorwa byo kwitegereza amashusho agaragaza ibikoresho bikora nka rukuruzi.
- Umwarimu yunganira abafite ibibazo mu kwitegereza no gutandukanya ibikoresho bikora nka rukuruzi.

e. Umwanzuro w'isomo

Umwarimu abaza abanyeshuri ibibazo biganisha ku kuvuga muri make ibyo bize. *Urugero:* Ni ibihe bikoresho bikora nka rukuruzi?

Ibikoresho bikora nka rukuruzi birimo utwuma dufungura amavisi, indangururamajwi, ...

f. Isuzuma

Guha abanyeshuri ibikorwa biri mu gitabo cy'umunyeshuri byo kurondora ibikoresho bikora nka rukuruzi.

10.10 Ibisozwa umutwe

a. Inshamake y'ibikubiye muri uyu mutwe

- Rukuruzi ni igikoresho gifite ubushobozi bwo gukurura ubutare cyangwa ibindi bikoresho bikoze mu butare.

- Ingufu za rukuruzi zirangwa n'ibi bikurikira:
 - Rukuruzi zirakururana cyangwa zigasunikana hagati yazo.
 - Ingufu za rukuruzi zambukiranya ibikoresho bikoze mu rupapuro, ikirahure, urubaho, parasitike,...
- Ibikoresho bikururwa na rukuruzi ni ibyuma bikoze mu butare.
- Ibikoresho bidakururwa na rukuruzini ibyuma bidakoze cyangwa bitarimo ubutare .
- Ibibi by'ingufu za rukuruzi :
 - Kwangiza ibikoresho nk' amakarita ya banki cyangwa indangamuntu, za kasete za radiyo cyangwa za "video", mudasobwa n'ibyuma bikorana na zo nka CD, DVD, "flash disk",...
 - Rukuruzi yatera uburwayi uyikoresha iyo ayishyize mu kanwa cyangwa akayimira.
- Ibikoresho bikora nka rukuruzi :
 - Indangururamajwi zitandukanye (speakers)
 - Utwuma dufungura amavisi (screwdrivers).

b. Ubumenyi bw'inyongera umwarimu asabwa kugira

- Ni byiza ko umwarimu agira ubumenyi bwimbitse ku bintu byose bibamo rukuruzi, aho yabona rukuruzi zisobanutse.
- Agomba gusobanukirwa bihagije na rukuruzi, imikorere yayo n'ibiyiranga.
- Asabwa gukora imyitozo imwe n'imwe kuri rukuruzi mbere yo gutanga amasomo kuri uyu mutwe.
- Byaba byiza atiye rukuruzi abantu bakora amaradiyo.

c. Ibisubizo by'isuzuma risoza umutwe wa 10 riri ku rupapuro rwa 133 mu gitabo cy'umunyeshuri

1. Rukuruzi ni igikoresho gifite ubushobozi bwo gukurura ubutare cyangwa ibindi bikoresho bikoze mu butare.

2.

| Ibikururwa na rukuruzi | Ibidakururwa na rukuruzi |
|-------------------------------|---------------------------------|
| Udufashi tw'impapuro | Amakaramu |
| Umusumari | Ikibiriti |
| Imfunguzo | Ikaramu y'igiti |
| Igikwasi | Agati |
| Urwembe | Impapuro |
| Inzuma | Umwenda |
| Urushinge | Ibikoresho bikoze mu ibumba |

| | |
|--|-----------------------------------|
| | Ibikoresho bikoze muri parasitiki |
| | Ibikoresho bikoze mu kirahuri |
| | Ibikoresho bikoze mu giti |
| | Ibishyimbo |

3. Ibikoresho bikoze mu butare ni byo byonyine bifite ubushobozi bwo gukurura rukuruzi naho bikoresho bikoze mu bindi bintu nk'ibiti, impapuro, ikirahuri, parasitiki n'ibindi ntabwo bikurura cyangwa ngo bikururwe na rukuruzi.
4.
 - a. Imisumari, igikwasi, urushinge, urwembe, imfunguzo n'ibindi
 - b. Ikaramu, umwenda, igiti, ibishyimbo, impapuro, ikaramu y'igiti n'ibindi
5.
 - a. Rukuruzi
6. Utwuma dufungura amavisi, utwuma tuba mu ndangururamajwi zitandukanye n'ibindi.
7. Ingufu za rukuruzi zambukiranya ibindi bikoresho bikoze mu mpapuro, mu kirahuri, mu rubaho no muri parasitike zigakurura ubutare cyangwa bikoresho bikoze mu butare.
8. (CD), (DVD), amakarita ya banki, "floppy disk", "flash disk" n'ibindi.
9. Ibyuma bipima abarwayi kwa muganga, radiyo, tereviziyo, firigo, idira, terefoni,

d. Imyitozo y'umwihariko ihabwa abanyeshuri bagenda buhoro mu myigire n'ibisubizo byayo

Mwegeranye rukuruzi 2 cyangwa nyinshi musobanure uko bigenda.

Ibisubizo

Ibisubizo biranyuranye kuko biterwa n'ibyo abanyeshuri bakoze.

e. Imyitozo y'umwihariko ihabwa abanyeshuri bihuta cyane mu myigire kurusha abandi n'ibisubizo byayo

Mushyire ibintu bidakururwa na rukuruzi nk'ibikoresho bya parasitiki, impapuro, ibikoresho bikoze mu giti hagati ya rukuruzi 2 cyangwa nyinshi musobanure uko bigenda.

Ibisubizo

Ibisubizo biranyuranye kuko biterwa n'ibyo abanyeshuri bakoze.

11 IBISUBIZO BY'ISUZUMA RISOZA UMWAKA WA GATATU

(Urupapuro rwa 134 – 135 mu gitabo cy'umunyeshuri)

1. Ibisubizo biratandukanye bitewe n'ubwiza bw'igihanaguzo umunyeshuri yakoze
2. Ibisubizo biratandukanye bitewe n'ubwiza bw'agatambaro umunyeshuri yaboshye ndetse n'uburyo yaboshye mu mboho yabajijwe
3. Ibisubizo biratandukanye bitewe n'ubwiza bw'agatambaro umunyeshuri yaboshye ndetse n'uburyo yaboshye mu mboho yabajijwe
4. Ibisubizo biratandukanye bitewe n'ubwiza bw'imvumba umunyeshuri yaboshye
5.
 - Kwegeranya ibikoresho
 - Gushyira urupapuro cyangwa igikarito ku meza
 - Guca imfuruka igororotse ukoresheje inguni
 - Gupima cm 10 za buri murongo ukoze iyo mfuruka
 - Guca indi mfuruka igororotse iteganye n'iyo waciye uhuza aho iyo mirongo ikoze imfuruka ya mbere igarukiye.
 - Kugenzura ikinyampande wakoze ko gifite impande 4 zingana n'imfuruka 4 zigororotse .
 - Gukata kare wakoze wifashishije umukasi.
 - Kwerekana kare wakoze.
6. Ibisubizo biratandukanye bitewe n'ubwiza bw'urukiramende na mpandeshatu umunyeshuri yakoze
7. Ibisubizo biratandukanye bitewe n'ubwiza bw'akabindi umunyeshuri yabumbye
8. Ibisubizo biratandukanye bitewe n'ubwiza bw'imodoka umunyeshuri yakoze
9. Ibisubizo biratandukanye bitewe n'ibizaba bikubiye mu butumwa bugufi buri munyeshuri azohereza.
10. Ibisubizo biratandukanye bitewe n'uburyo buri munyeshuri azashyira mu bikorwa ibyo yasabwe gukora.
11. Ibisubizo biratandukanye bitewe n'uburyo umunyeshuri uhamagara n'uwitaba bazashobora kumvikana maze ubutumwa bahana bugashyirwa mu bikorwa.
12.
 - Gukanda kuri "button" ya "menu".
 - Gukanda ku gashusho ka porogaramu yo gufotora.
 - Kureba ko icyo ushaka gufotora ukibona neza maze ugakanda kuri "button" ya "camera".
13.
 - Guhamagara *182#
 - Guhitamo umurongo w'itumanaho wa MTN

- Guhitamo ururimi ushyiramo 2 guhitamo Ikinyarwanda, ugakanda "send".
- Gushyiramo kohereza ushyiramo 1, ugakanda "send".
- Guhitamo niba uwo woherereza ari muri "mobile money" ugashyiramo 1 ugakanda "send".
- Kwandika inomeru ye ya terefoni ugakanda "send".
- Kwandika umubare w'amafaranga ugakanda "send".
- Kwandika impamvu ugakanda "send".
- Gushyiramo umubare w'ibanga nyuma yo kugenzura ko amazina, inomeru n'amafaranga bihuye n'ibyo ushaka, maze ugakanda sendi hanyuma ukabona ubutumwa bukwereka ibyo umaze gukora uko byagenze.

14.

- Guhamagara *182#
- Guhitamo umurongo w'itumanaho wa MTN.
- Guhitamo ururimi ushyiramo 2 ugahitamo Ikinyarwanda, ugakanda "send".
- Guhitamo kugura wandika 2 ugakanda "send".
- Guhitamo kugura umuriro wandika 2 ugakanda "send".
- Kwandika amafaranga ushaka kwishyura umuriro ugakanda "send".
- Kwandika inomeru ya ya konteri yawe, ugakanda "send".
- Kwandika umubare w'ibanga nyuma yo kugenzura ko inomeru ya konteri n'amafaranga bihuye n'ibyo ushaka, maze ugakanda sendi ukabona ubutumwa bukwereka uko ibyo umaze gukora byagenze.

15.

- Shift : Tushi yo guhindura
- Backspace: Siba ugana imbere
- Ctrl: Ifasha guca inzira za bugufi kuri mwandikisho (keyboard) ugiye gukora ibindi bintu. **Urugero:** Gukanda "Ctrl" n'inyuguti ya "s" icyarimwe ni ukubika ibyo wandikaga "save".
- Alt: Ituma ushobora kwandika ibimenyetso.
- Enter: Kwinjira, kwemeza cyangwa kujya ku murongo ukurikiyeho.

16. Ibisubizo biratandukanye bitewe n'uko umwana azakurikiza amabwiriza yahawe mu kwandika interuro.

17. Ibisubizo biratandukanye bitewe n'uburyo buri munyeshuri azashyira mu bikorwa ibyo yasabwe gukora

18. Macinyamyambi, korera, inzoka zo mu nda, tifyoyide n'ibindi.

19. Ibumba, urusenyi n'imberabyombi.

20. Gutera ibiti, gucukura imirwanyasuri no gutera ibyatsi birwanya isuri

21. Inyamaswa zifite urutirigongo ni inyamaswa zifite igikanka cy'amagufwa mu mibiri yazo naho inyamaswa zidafite urutirigongo ntabwo zigira igikanka mu

- mibiri yazo.
22. Imyitozo ngororamubiri no kurya indyo yuzuye.
 23.
 - a. Ingufu z'imirasire y'izuba
 - b. Ingufu z'amashanyarazi
 - c. Ingufu zitanga ubushyuhe
 24. Ingufu zituma babona urumuri, ubushyuhe, imyenda yuma, zigatuma bateka ibyo barya n'ibindi.
 25. Amashanyarazi atuma abantu bateka ibyo barya, arabamurikira, atuma bumva bakanareba tereviziyo, atuma bakora imirimo itandukanye bakoresheje amamashini n'ibindi.
 26.
 - Rukuruzi zirakururana cyangwa zigasunikana hagati yazo. Iyo rukuruzi ebyiri zegeranye imitwe isa irasunikana (N na N / S na S) Imitwe itandukanye igakururana(N na S). Ingufu za rukuruzi zambukiranya ibindi bikoresho bikoze mu mpapuro, mu kirahure, mu rubaho no muri parasitike zigakurura ubutare cyangwa ibikoresho bikoze mu butare.
 27.
 - a.
 - Gukanda kuri "button" ya "next" ku idirishya rya "Home Row" "balloons".
 - Gukanda kuri "Start Lesson".
 - Gukanda kuri enter hanyuma ukandika inyuguti wahawe maze ukareba amanota ugira.
 - b.
 - Kujya kuri "Home View"
 - Gukanda kuri porogaramu ya "Typing Turtle"
 - Gukanda kuri "Start New"
 28. Porogaramu ya "Write Activity" igizwe n'igice kiriho utuyoboro n'igice bandikamo.
 29. Gutwika ibintu bikaba ivu, kubetera, gushyira umusemburo mu ifarini ikabyimba.

12 IBITABO BYIFASHISHIJE

1. Rwanda Education Board, (2015), Integanyanyigisho y'Ubumenyi n'Ikoranabuhanga Riciririse, Ikicro cya mbere cy'Amashuri Abanza, Kigali
2. IRST,(2000), Inkoranya y'Ikinyarwanda mu Kinyarwanda, Igitabo cya 1, icya 2, icya 3 n'icya 4, Butare: IRST
3. Minisiteri y'Amashuri Abanza n'Ayisumbuye, (Kamena 1983), Urutonde rw'Amuga, Ikinyarwanda – Igifaransa, Ibiro by'Integanyanyigisho z'Amashuri Abanza n'iz'Agamije Amajyambere y'Imyuga, Kigali
4. Minisiteri y'Uburezi, Ubumenyi, Ikoranabuhanga n'Ubushakashatsi, (2003), Ubumenyi n'Ikoranabuhanga Riciriritse, Igitabo cy'Umunyeshuri, Umwaka wa 3, 4, 5 na 6, Ikigo cy'Igihugu Gishinzwe Integanyanyigisho, Kigali
5. Minisiteri y'Uburezi, Ubumenyi,Ikoranabuhanga n'Ubushakashatsi, (2007), Ubumenyi n'Ikoranabuhanga Riciriritse, Igitabo cy'Umwarimu, Umwaka wa 3, 4, 5 na 6, Ikigo cy'Igihugu Gishinzwe Integanyanyigisho, Kigali
6. The Dorling Kindersley (1996), Science and Encyclopedia, The Dorling Kindersley, London New York, Stuttgart
7. Oxford Concise Science Dictionary (Third Edition), (1996), Oxford University Press, New York.